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WASHINGTON MEDICAL ANNALS

AN ATTEMPT TO EXPLAIN THE PERITONEAL ADHESIONS THAT SO FREQUENTLY PRECEDE TYPHLITIS AND APPENDICITIS.

By A. F. A. KING, A. M., M. D.,

Washington, D. C.

Something more than a year ago (November 30, 1904) I read before this society a paper on the Etiology of Appendicitis in which it was maintained that the disease began in many cases by the breaking up, stretching or other traumatism of adhesions between the appendix, caecum and neighboring surfaces of peritoneum; and further that the injury of these adhesions was due to violent action of the psoas muscle, etc., from the use of the bicycle. In the discussion, no one agreed with me; adverse criticism was universal. This was not unexpected, nor was it altogether undeserved, for, while I am convinced that the future will prove that I was in the main correct, I am willing to admit that my charge against the bicycle was somewhat too severe, or overdrawn—perhaps I should say too exclusive, for the reason that other forms of exercise—baseball, football, polo, rowing, the strains incident to stepping on and off cars, etc.—which began to become popularized coincidently with the bicycle, may also have contributed to injure the peritoneal adhesions, much in the same manner as bicycling. I do not wish (as the lawyers say) to *nolle pros.* my indictment against the bicycle by any means, but I am willing to ameliorate it by extending the charge to its etiological confederates.

However, it is not the purpose of the present paper to reopen this discussion, though a direct reference to it will be unavoidable.

My purpose now is to enquire why so large a proportion of modern men and women should have the morbid peritoneal ad-

hesions to which reference has been made. *Without* these adhesions, the action of the bicycle and similar forms of strain would have no application at all to appendicitis.

In my former paper I quoted the statements of Dr. With (*London Medical Record*, 1880, Vol. VIII, page 213), that the appendix was found diseased in 110 out of 300 autopsies, and of Dr. R. H. Fitz (*Trans. Association of American Physicians*, Vol. I, 1886, page 118), that there is evidence of disease of the appendix in more than one out of every three autopsies; and of Dr. Robinson, who found peritoneal adhesions between the psoas muscle and whatever came in contact with it, in 72 per cent. of 128 mixed autopsies.

Dr. Howard Kelly, in his recent elaborate treatise on appendicitis (page 249), says that fibrous adhesions were found in 325 out of 3,770 autopsies (8.62 per cent.) in the Boston City and Johns Hopkins Hospitals, but adds that "this percentage is undoubtedly *too low*, and it is probable that adhesions were present in some cases not mentioned." He further says: "Hartley quotes Hektoen as finding adhesions 42 times in 280 cases (15 per cent.); Maurin 16 times in 112 cases (14.3 per cent.); McBurney in 230 autopsies found evidences of chronic inflammation (adhesions) in 70 per cent.; Boody in 528 autopsies found adhesions in 126 (24 per cent.)."

Finally I may quote Dr. Kelly once more as follows: "No doubt adhesions about the appendix are so common as to indicate that many people, at some time during their lives, have had an inflammatory process involving the appendix, which has not however caused any serious consequences." In most cases he says there is no "evidence of ill health or discomfort," etc.

Admitting, then—as I think we must—that these latent peritoneal adhesions around the appendix and caecum really are of common occurrence, how do we account for them? Hitherto they have been universally ascribed to *inflammation*. In fact the existence of peritoneal adhesions has been taken as *prima facie* evidence of peritonitis. But is this really true? I venture to think it is *not*. Of course all depends upon our *definition* of inflammation, and the term has a great many different definitions. Nowadays inflammation is held to imply a coexistent or preexistent septic infection. Such a process as an aseptic inflammation does not seem at all admissible with our present way

of thinking. Yet that what we recognize as morbid adhesions—differing in no respect from inflammatory adhesions—can occur without either infection or inflammation, is easily demonstrable. Note, for example, the adhesions that invariably occur in a joint that has been kept for some time immovable during the treatment of a fractured bone. The joint itself may not be implicated in the fracture, there may have been no external wound through which infection could occur, and yet we find adhesions, which, if we examined them *post mortem*, would be found indistinguishable from the adhesions of inflammation. Any joint kept at rest, with or without fracture, will in time develop such adhesions. Can we say they are always of inflammatory origin? They have been perfectly latent, without any discomfort or ill health; and with no redness, pain, heat or swelling; no fever and no septic infection.

May we not rather regard such adhesions as processes of evolution of adaption of structure to function—of readjustment of organs, to readjusted or modified use? Under such circumstances, if the adhesions are to be considered of inflammatory origin, we should have to look upon the inflammation as a *physiological* process rather than as an abnormal one. The reconstructed organs fastened by adhesions, will of course have suffered some degradation of functional activity. Instead of remaining, as they originally were, endowed with normal motility, they will, from continued disuse of this endowment, cease to possess it, and become as it were disfranchised of that more exalted plane of functional activity, which would, under circumstances of natural use, have been continued indefinitely without interruption.

Nature is frugal. Perhaps the cheapest tissue in the body is the connective or fibrous tissue out of which these adhesions are constructed. Everywhere throughout the body, and in all organs, liver, kidneys, lungs, as well as peritoneum and joints, where the normal functionating tissues atrophy, the almost functionless fibrous tissue takes their place. We call it fibrosis, sclerosis, cirrhosis and areolar hyperplasia. When a moving organ, from disuse ceases to move in conformity with the design of its original construction, it becomes fixed by adhesions. Nature will not support the more elaborate and more costly tissues of a moving structure when a cheaper fixed and immovable one is sufficient to meet the functional requirements of the individual under the environing conditions in which he lives.

Now the caecum and appendix (like other parts of the intestine) in their normal condition are covered with peritoneum and are in apposition with the peritoneum of contiguous structures, and between these peritoneal layers there is always sufficient moisture to promote easy motion. This we all know. Now what has happened to the caecum and appendix of modern man, that these freely moving surfaces have grown together by adhesions? Evidently they have failed to move in the manner and degree which they ought to have done, and consequently the unmoved peritoneal surfaces have grown together and become adherent. We cannot, I think, call such adhesions *inflammatory* products; on the contrary they have occurred as latent evolutional processes quite independent of inflammation.

We have next to ask what has led to the assumed unnatural immobility of the structures concerned? What has restrained or kept at rest the peritoneal surfaces, which naturally should have been moved against each other every day, so that no adhesions could occur?

There is certainly one thing which civilized man has failed to do that primitive man always did, and which a great many persons in rural districts still do, which may have had the effect of passively moving the lower abdominal viscera mechanically in such a manner as to roll their peritoneal surfaces against each other and thus prevent adhesions.

Before the artificial customs of civilization, every man and woman probably produced this passive movement of the viscera at least once every day; while now, especially in what we call the higher walks of civilized life, thousands of men and women pass many successive years without ever once subjecting the bowel to this natural passive mechanical movement.

I refer to the mechanical pressure of the thighs upon the lower abdomen produced by the conquiniscent * posture during defecation. It seems hardly possible that this posture can be assumed without the thigh pressure lifting the viscera and changing the relations of their peritoneal covering, especially those portions of the intestine immediately above the pelvic brim, in the vicinity of the iliac fossae.

I show you a photograph (which I had taken fifteen years ago to illustrate the effect of thigh pressure in correcting trans-

* From *conquinisco, is, conquexi,* n. 3, *to squat.*

verse presentations,) which I think clearly indicates how the bowel can be lifted up and passively moved by thigh pressure upon the abdomen during defecation in the normal conquiniscent attitude. Most animals, as a rule, assume a definite posture for defecation, for the purpose apparently of securing cleanliness. With man the wide divergence of the nates and eversion of the anal orifice incident to squatting, secure a degree of cleanliness not obtainable in any other way; it is unquestionably the *normal posture for defecation.*

Being so, and assuming that the caecum and appendix really are subjected to this passive movement of their peritoneal covering, a movement not attainable in any other way, then it would follow that peritoneal surfaces which ought to be thus naturally moved, will in time become more or less liable to adhesion if such movements do not take place.

You will say this is pure theory. Admittedly so, for the present. But speculation is often the pioneer of discovery. Experiment and observation must settle the matter of course. It has occurred to me that if we could open the abdomen of a recent cadaver in which no peritoneal adhesions were present; then sew the apposed peritoneal surfaces of the caecum together, with extremely delicate, fragile threads; after which, close the abdominal incision, and place the cadaver in a conquiniscent posture, or perhaps press the thighs upon the abdomen by manipulation so as to imitate it, we could then find how many of the threads were broken or torn out of the tissues through which they had been passed. Thus the influence of posture in moving the peritoneal surfaces might be tested.

Constipation is universally recognized as a very common forerunner of appendicitis. It is easy to understand how the caecum or colon, when one or more of their peritoneal surfaces are tethered by adhesions, will have their peristaltic movements impaired; thus the neglect of the conquiniscent posture becomes a remote etiological factor preceding and causing a torpid bowel.

I have been pleased to find some confirmation of this idea in a paper by Dr. W. Collier, who states (*Lancet, London*, April 1, 1905, page 862) that among a large number of rowing men whom he had treated, he had had no single case of chronic constipation, which he thinks was due to the abdomen being intermittently pressed with a certain amount of violence against the thigh mus-

cles, thus stimulating peristalsis and forcing bile from the liver into the intestine. In those who do not row, he advises that they should "indulge in other movements, such as the squatting movement."

And again, Dr. Wright of Toronto, Canada, in his recent text book on Obstetrics, under the Hygienic Treatment of Constipation, advises that the patient "should employ as nearly as possible the "squatting" posture during defecation." And after deploring the faulty posture incident to the use of our modern closets, he suggests (exactly what I was coming to) to correct this "by placing something on the floor from six to twelve inches high on which the feet may rest" during defecation.

Still another writer, Dr. W. J. Tyson, in the last number of *The Lancet* (December 23, 1905, page 1833), on the Prevention of Appendicitis and Constipation, laments that "the old fashioned and natural method of stooling on the ground, with the thighs flexed on the abdominal walls, so that in straining the inguinal and femoral canals are practically closed, has now gone out of fashion and the modern unscientific, though comfortable, method is substituted for it." He further remarks that "the former method of stooling is made more conducive to the thorough emptying of the bowel and therefore less likely for obnoxious and poisonous materials to be left behind"; and he says that there are already on the market water closets made to carry out the natural methods, etc.

Last October, in discussing this subject with a lay friend (Mr. Glenn Brown, the architect, of this city), he called my attention to a patented device—the so called "*naturo closet and seat*"—which, while it is a step in the right direction, by no means meets the requirements of a real conquiniscent posture. I show you the inventor's circular and illustrations.

To be effective all we need is a solid foot rest, high enough to *compel the thigh pressure of primitive defecation* while the seat affords comfortable support during the proceeding.

While these quotations show that I am not alone in recommending the conquiniscent posture for constipation, none of the writers cited suggests that peritoneal adhesions occur from abnormal rest of the peritoneal surfaces consequent upon the *absence* of thigh pressure upon the abdomen.

Dr. Howard Kelly of Baltimore, in his treatise on appendicitis

(page 359) refers to the rarity of the disease among the negro population of some of our southern States. He quotes Dr. S. C. Briggs of Nashville, Tenn., as having performed "several hundred" operations for appendicitis, only one being in a negro; Dr. H. J. Inge of Mobile, Ala., 149 operations, only one in a negro; Dr. G. B. Noble of Atlanta, Ga., never operated upon a negro for appendicitis; Dr. L. L. Hill of Montgomery, Alabama, among a colored population of 9,000 (known as the "black belt") could collect only four cases of appendicitis. Dr. Kelly himself states that the "admissions" for appendicitis at the Johns Hopkins Hospital are four white to one black, and the cases operated upon twelve white to one black.

While without further investigation no one can give the reason for this comparative immunity in the negro of these localities, from my own point of view it would be interesting to know whether or not they habitually follow the normal posture for defecation, and thus avoid peritoneal adhesions in the manner suggested.

From this somewhat rambling paper I may now sift out the following definite propositions:

1st. Peritoneal adhesions about the caecum and appendix are not necessarily of inflammatory origin, as is generally supposed, but are evolutionary processes of adaptation.

2d. The adhesions are probably produced by abnormal immobility of the parts consequent upon lack of thigh pressure on the abdomen such as occurs in the natural conquiniscent posture during defecation.

3d. Such adhesions having occurred, the peristaltic function of the caecum is impaired, with resulting constipation, retention of toxic matter in the intestine, and infection of the appendix.

4th. When the adhesions are suddenly, violently and repeatedly stretched, lacerated or otherwise traumatically disturbed by the muscular strains incident to bicyling, polo, tennis and similar exercises, peritonitis, typhlitis aad appendicitis are produced.

5. To prevent this "sea of troubles" civilized man must secure to the peritoneal surfaces their daily normal movement, by reverting to the natural conquiniscent posture of his ancestors in defecation.

Dr. J. Ford Thompson said that he was ever an admirer of Dr. King's ingenuity, but he thought that the conclusions arrived at in this instance were entirely too far reaching. Nature provides every part with what is needed for its own protection, therefore simple rest of the intestines would not give rise to adhesions. As a matter of fact, the intestines are never really at rest, as peristalsis is going on all the time. The joint stiffness following the treatment of fractures not involving the joint itself is not due to adhesions within the joint. Dissection would show that the limitation of motion is due to the agglutination of tissues external to the joint; a normal joint can be kept in a cast for years without impairing its structure. The squatting posture for defecation once a day could not be as efficacious in causing the movement of the peritoneal surfaces over each other as the constant peristaltic waves, and therefore he was not inclined to accept the suggestion for the prevention of adhesions.

In his opinion, there must be some definite inflammatory cause for adhesions; he admitted that adhesions such as Dr. King had spoken of are frequently found *post mortem* and on the operating table, but they are due to some previous inflammatory disease about the caecum. We know that such diseases often occur and often get well. Dr. Thompson differed in every respect with Dr. King as to the theories advanced in the paper under discussion.

Dr. Chappell said that Dr. King seemed to him to have begged the question. After contending that exercise causes disease, he had advocated exercise as a means of preventing it. He had proposed the squatting posture in defecation as an exercise for the prevention of appendicitis; if such a slight exercise would prevent it, why would not more exercise be more certain? He had commended rowing, but had condemned all other forms of exercise.

Dr. Kober said it may as well be conceded that while appendicitis is well known, we must look further for the exact etiology. The disease is now readily recognized, and is probably what was formerly called idiopathic peritonitis. As the frequency of appendicitis has increased the number of reports of liver diseases, gastric diseases and idiopathic peritonitis has diminished. We know something of the bacteriology of appendicitis, but nothing of its exact etiology.

When Dr. King presented his statistics showing the age of greatest susceptibility to appendicitis, Dr. Kober was struck with the fact that it coincides with the age of greatest frequency of typhoid fever, and thought that often in appendicitis we are dealing with a typhoid infection, especially so since we know that afebrile typhoid occurs. He asked that the members of the Society make the Widal test in every case of appendicitis coming under their care. He did not claim that the typhoid infection is present in the great majority of cases, but believes that it will often be found to exist.

Dr. Reyburn said that Dr. King's papers were always interesting, and that he was to be complimented upon the essay just read. Dr. Reyburn agreed that the squatting posture for defecation was natural and should be of benefit when habitually assumed. His belief was that the cause of appendicitis is constipation. It is not due to stillness of the bowel; the intestines are always in motion. Constipation puts the intestines, particularly the caecum, in splints and then causes disease by dragging down the distended gut.

Dr. I. S. Stone said that he knew of no subject that caused greater diversity of opinion than that of the exact mode in which the bowels move. How much does each loop of bowel move? With reference to Dr. King's theory, how much relative motion is there normally between two peritoneal surfaces? The question is of importance to surgeons in the study of post-operative constipation. Dr. Stone could not think that simple passivity of the intestine causes adhesions. He had often heard of persons in catalepsy whose bowels were as dormant as the rest of the individual, but he had never heard that the intestinal movements failed to appear when function was restored to other parts.

He should like to know how constipation causes adhesions before he could believe in Dr. King's idea. Bandages and pads applied for the purpose of holding abdominal organs in position are, in Dr. Stone's opinion, ineffectual, and certainly no adhesions could occur from their use. He did not believe that adhesions occur without ulceration, sepsis or chemical irritation. Adhesions from chemical irritation may occur as a result of ptomain poisons transmitted through the intestinal wall.

Dr. E. C. Prentiss called attention to Dr. King's statement that from 40 to 70 per cent. of abdomens opened at operation or *post mortem* present peritoneal adhesions. Dr. Prentiss had had the opportunity of studying histologically a number of appendices, which, though apparently normal, presented microscopic evidence of old inflammation. It is recognized that many cases of mild appendicitis occur which get well; after recovery the appendices appear normal but the adhesions remain.

He thought it would have been interesting to know if such studies of the appendices had been made in the cases from which Dr. King's figures had been derived. Perhaps the adhesions were due to recovered appendicitis, rather than appendicitis due to adhesions.

Dr. King closed the discussion by saying that Dr. Chappell's remarks indicated a misapprehension of his [Dr. King's] statements. He had not said that rowing prevents appendicitis, but that it prevents constipatation, which is a cause of appendicitis. Exercise is to be commended and does good, and produces trouble only when resumed after adhesions have been formed as a result

of an unnatural lack of exercise. He himself thought that there is no proof that active peristalsis is constantly going on.

In spite of criticism, he would adhere to the theory that appendicitis is due to adhesions torn during violent exercise.

CASE OF TUBERCULOSIS OF KIDNEY; NEPHRECTOMY.*

By E. M. HASBROUCK, M. D.,

Washington, D. C.

In 1888, while doing some fancy bicycle riding, the patient severely bruised his testicles. Beyond the immediate pain he had no bad effects for several years. In January, 1892, his left testicle began to enlarge and was quite painful. It was found to be tubercular and was removed. On February 22, 1893, his right testicle had become enlarged and was also removed for the same reason. Afterwards he was perfectly well except for a slight cystitis which appeared a year ago but quickly yielded to treatment. March 19, 1905, he consulted me for cystitis. Urination was frequent and painful; he had to get up frequently at night and went to the closet every half hour during the day. I began treatment with simple irrigation with a solution of boracic acid, but he sent for me the following midnight because of total retention of urine. He was catheterized with much difficulty that night and again the next night. A metal irrigator was now substituted for the soft catheter, and irrigation was continued with a 5 per cent. solution of argyrol every other day. For several days there was much clogging of the instrument with detritus. After five weeks treatment all symptoms of cystitis subsided, although the urine contained large quantities of pus. About May 1 a specimen of the pus was examined by Dr. J. B. Nichols, who found a few "acid fast bacilli". May 6, Dr. Hagner used the cystoscope and found an inflamed and swollen area posterior to and continuous with the mouth of the right ureter, from which flowed cloudy urine; the urine from the left ureter was clear. May 7, a small meatus was cut and dilated up to 28 F. May 13, Dr. Hagner catheterized the ureters; the urine from

*Reported, with specimen, to the Medical Society, January 10, 1906.

this kidney contained large quantities of pus; that from the left was normal. A series of examinations for tubercle bacilli proved negative. As a last resort a guinea pig weighing 19.5 ounces was injected intraperitoneally May 29 with 30 minims of pus. July 4, he weighed 15.5 ounces, a loss of four ounces in five weeks. The peritoneum was found literally studded with tubercles; there appeared to be a few in the liver, and the mesenteric glands were enlarged and apparently tubercular.

July 6, I removed the right kidney through a lumbar incision. The ureter was indurated and tense, but it was thought best not to remove it; instead it was ligated and the stump disinfected and dropped. The kidney was much enlarged, lobulated at the upper end and adherent. He stood the operation well and was put to bed in good condition. Saline infusions and enemata were given to stimulate the other kidney.

During the first 24 hours the secretion of urine as secured by catheter was 7 ounces; the next 24 hours, 15½ ounces, after which the flow was abundant. A drainage tube carried to the bottom of the wound was removed on the fourth day. His temperature reached 101 at night for five weeks and then dropped to normal. Recovery was uninterrupted, and he returned to work August 21. A fistulous opening remained till November 28 when it closed; in the meantime the patient had gained 18 pounds.

The kidney removed is twice the normal size, lobulated in the upper half and divided by sulci; much broadened and fluctuating. On section a mass of pockets was found containing pus of all colors and consistencies from clear watery-looking fluid to green pus and caseous pus. In fact so little kidney structure remains that it is difficult to see how it functionated at all. Microscopical examination has failed to find the tubercle bacilli in the kidney. It may be added that at no time previous to the operation was there any pain referable to the kidney; in fact the patient enjoyed exceedingly good health.

Dr. Hagner said he thought that Dr. Hasbrouck should be congratulated upon the result obtained in his case. The post-operative history well illustrates the relief of bladder symptoms often obtained by removing the source of infection; as bladder tuberculosis is usually the result of descending infection, excision of the tuberculous kidney offers the only hope of cure. Local treatment of, and operations upon, the bladder itself are of no avail.

Dr. Hasbrouck's case also illustrates the importance of ureteral catheterization. Dr. Hagner could not deny that there was danger of infecting the other organ by this procedure in tuberculous cases, but the bladder is always thoroughly irrigated, and, as the cystoscope is placed very near the ureteral orifice, an expert can pass the catheter directly into the ureter, traversing the cavity of the bladder for a very short distance. The danger is thus reduced to a minimum and the advantages derived from the method compensate for the risk. Kaspar reports 420 cases of renal tuberculosis; in 210 cases without ureteral catheterization, the mortality was 24.8 per cent. ; in 210 cases with ureteral catheterization the mortality was reduced to 9 per cent. The inference to be drawn from these figures is that bilateral are cases recognized by the use of the ureteral catheter, are not subjceted to nephrectomy, and the mortality of the operation is thus reduced.

Dr. Vale said that but few now question the desirability of a preliminary study of the separated urines in any case in which kidney surgery is contemplated, though there might be a difference of opinion as to the best method of accomplishing the separation. There is an unanimity of opinion, however, among even the most enthusiastic supporters of ureteral catheterization, as to the undesirability of catherizing a supposedly healthy kidney in the presence of a supposedly tubercular kidney—all acknowledging this contraindication. Dr. Hagner had found with the cystoscope, pus coming from the right ureter and an ulcer around its orifice; with this strong presumptive evidence of tuberculosis of the right kidney the left ureter should not have been catheterized, in the opinion of Dr. Vale, especially as we have in the Luys instrument a means of separation, accurate and absolutely safe.

Dr. Hagner replied that Kaspar, who had done more ureteral work than any other one man, had given the precedent for the use of the ureteral catheter. In this case, moreover, the segregator would have been entirely useless, as an area of ulceration extended quite across the base of the bladder, making it impossible to determine by that means the exact source of the tubercle bacilli.

Dr. Hasbrouck closed the discussion by saying that one could not be too careful in determining the condition of the opposite kidney before performing nephrectomy. His belief was that ureteral catheterization is the proper method, the catheter does not come in contact with the bladder wall, but passes directly into the ureteral orifice, and in able hands the operation is so quickly and easily done that he does not believe that infection is often conveyed by the catheter.

CASE OF PAPILLOMA OF THE RECTUM; OPERATION.*

By D. G. LEWIS, M. D.,

Washington, D. C.

A woman, 23 years of age, was sent to Dr. Lewis from Virginia, supposed to be suffering from *fistula in ano*. Examination showed three fistulous openings, but in addition there was evidence of some intrarectal condition which gave rise to the fistulae; he made out a growth within the rectum, but could not determine its extent or nature; the mass bled freely from the gentlest manipulation. A specimen taken for examination proved to be papilloma, with no evidence of malignancy. As the disease was so extensive, he adopted palliative measures, and slit up one fistula and curetted the others, scraping away as much of the growth as possible. The operation was without value, and finally, at the patient's solicitation, he reluctantly decided to extirpate the rectum.

With Dr. J. Thomas Kelly's assistance, the abdomen was first opened to explore the gut for any intraabdominal involvement; the intestine appeared to be normal to touch and to sight. The abdominal wound was closed and the rectum excised by splitting the perineum and the posterior vaginal wall to within an inch of the cervix uteri, and drawing down the rectum as the dissection proceeded. After dissecting out the rectum to the extent of seven inches, the gut was divided and the cut end was sewn into the vagina, first making a half twist, in the hope of securing a sort of artificial sphincter. Unfortunately the gut above the point of division still showed small papillomatous masses as high as could be seen, and he felt as if the patient would derive little benefit from the procedure. She recovered well from the operation, but of course has fecal incontinence.

[Since reporting this case, Dr. Lewis finds that the papillomatous masses have entirely disappeared from the patient's rectum, and that her general condition is much improved. She has gained much in weight and can go about in comparative comfort.]

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*Reported, with specimen, to the Medical Society, December 6, 1905.

CASE OF EPITHELIOMA REMOVED FROM PREPUCE OF CLITORIS.*

By THOS. C. SMITH, M. D.,

Washington, D. C.

Dr. Smith presented a tumor which he had removed on January 7, from a woman sixty years of age. At first glance the growth appeared to be a hypertrophied clitoris. The clitoris was completely hidden by the mass, which was so sensitive that the patient was thrown into convulsions by the gentlest manipulation. The growth first made its appearance last March, and gradually increased in size, until at his examination it was about two inches in length. It involved the nymphae. As it appeared to be very vascular, and he apprehended hemorrhage, he transfixed the mass and cut it away, exposing the clitoris intact. The point of origin was found to be the prepuce of the clitoris, but the tumor extended as high as the symphysis.

[Dr. J. B. Nichols examined this tumor microscopically, and found it to be an epithelioma.]

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CASE OF ALCOHOLIC HYPERTROPHIC CIRRHOSIS OF LIVER AND KIDNEYS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The liver weighed 6 pounds 14 ounces; about twice the normal weight; was very markedly hobnailed; microscopically [Mr. Neate] showed increase of connective tissue, but no atrophy of liver cells was found. The kidneys were large, weighing over eight ounces each and microscopically showed marked cirrhosis, and thickening of Bowman's capsules. The spleen showed passive congestion.

From a man age 40, laborer, who was admitted to hospital after a "spree." He talked incoherently, and had to be tied to the bed; became delirious, was unable to take food; defecation and urination became involuntary, and he died on the fifth day after admission, apparently from exhaustion. His temperature

*Reported, with specimen, to the Medical Society, January 10, 1906.

on admission was 97.8, rose to 101 the next day, and 102.2 the following day, fell to 101 the next day, and to 100.5 the next. Pulse was 84 to 88 till the day before death, when it rose to 100. Respirations 20 when admitted, rose to 36, and to 72 the day before death.

The *post mortem* examination showed the brain normal in its naked-eye appearance; the heart slightly enlarged and stuffed with white clots. Some tuberculosis in each lung, the lower lobe of the right and upper lobe of the left. The liver, spleen and kidneys as described; and the other organs appeared to be normal. The stomach was opened, and to the naked eye showed no lesion.

CASE OF FIBRO-MYOMA OF ROUND LIGAMENT; OPERATION.*

By D. G. LEWIS, M. D.,

Washington, D. C.

Mrs. H., a white woman, married, 44 years of age, residence Kensington, Md. She had one child, seven months old, the result of her only pregnancy. She was referred to Dr. Lewis by Dr. Wm. Lewis, of Kensington. She had been taken ill with a profuse metrorrhagia while walking on the street. Dr. Wm. Lewis sent her to the Garfield Hospital and the hemorrhage was checked by the use of tampons. Examination revealed an ulcerating neoplasm of the cervix, with a mass in the region of the right appendages. As the bleeding had been so exhausting, the patient was allowed to rest in hospital a week to recuperate. At the end of that time, the cervix was amputated and a specimen of the cervical tissue was taken for microscopic examination. Laparotomy was also performed and a firm mass, the size of a cocoanut, was found, whose point of origin was the right round ligament. This mass was removed, together with the tubes, which showed chronic salpingitis. The mass was found to be a fibro-myoma. On receiving the pathologist's report that the cervix was undergoing epitheliomatous degeneration, he performed vaginal hysterectomy. The patient made an uneventful recovery from the operation.

Dr. Lewis reported the case because of the infrequency with which neoplasms take origin from the round ligaments.

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*Reported, with specimen, to the Medical Society, December 6, 1905.

REMARKS PERTAINING TO AND A BRIEF DESSCRIPTION OF A MODEL FOR A NEW OPHTHALMOTROPE.*

By D. KERFOOT SHUTE, A. B., M. D.,

Washington D. C.

There are two types of Ophthalmotrope, one of them being exemplified by Knapp's instrument and the other by Landolt's. The former is constructed upon the principle that the eye moves about its center of rotation as if it were a universal joint or ball-and-socket (enarthrodial) joint, while the latter is based upon the principle of a hinge (ginglymus) joint.

The former type is misleading from almost every point of view.

Helmholtz taught that as far as the musculature of the eyeball is concerned, and from a mechanical point of view, the eye is capable of revolving about any conceivable one of an infinite number of diameters passing in any direction through the center of rotation. And yet he taught, as did Listing, that every possible *Physiological* movement of the eye occurs around an axis restricted to *one plane* (Listing's plane). This plane is a coronal one, a vertical transverse plane fixed in the head and passing through the center of rotation of each eye. Rotations about the vertical and transverse axes in Listing's plane can be compounded into rotations about any intermediate axis. Since the eye, mechanically, is capable of rotating about any one of an infinite number of diameters passing through the center of rotation, and yet is restricted physiologically to axes in only one plane, what is the restraining agency? It is a matter of *encephalic co-ordination*, a matter of innervation. This encephalic co-ordination creates axes for an eye, which are just as imperious in their sway over the movements of the eye as if they were fixed and rigid steel rods. It is true that under the dominating influence of the brain one physiological axis can instantly be replaced by another, so that movements can be secured in an infinite variety of directions. But the principle is the same as if one steel rod were withdrawn and another inserted in a different direction. Physiologically the eye revolves upon a given axis just as a rubber ball may be made to rotate upon a steel hat-pin thrust through it.

It is upon this principle that Landolt's Ophthalmotrope is con-

* Read before the Medical Society, January 17, 1906.

structed; it is upon this principle also that my own is based. My own device differs from that of Landolt in its simplicity, in the ease with which it can be constructed by any one out of very simple materials, such as an india-rubber ball, a hat-pin and a tobacco box; it also differs from his in the fact that the rubber ball can be so easily painted or marked with ink and made to serve as a model of an eyeball, instead of looking like a mere framework, as does Landolt's; it also has the great merit of concentrating the attention of the student upon a single axis at a time instead of distracting his attention by the presence of a number of very different axes; it can be made to show the rotation of the eye about axes *in* Listing's plane, thus giving lessons on *physiology*; or it can represent movements of the eyeball about axes perpendicular to individual muscle-planes and thus *out of* Listings' plane, so that the *pathology* of ocular motility can be investigated with the greatest accuracy. It readily permits also a study of ocular rotations under the influence of the internal and external *recti* when attached to the eyeball, either too high or too low. Lastly it differs from Landolt's instrument in that it was primarily constructed for the purpose of demonstrating the necessity of diversity instead of community of axes for the obliques on the one hand, and the superior and inferior *recti* on the other hand. In short the instrument differs from all others with which I am familiar in its extreme simplicity, flexiblity and adaptability for demonstrating all the known ocular rotations upon sound physiological principles.

Maddox, in his extremely interesting and instructive work on "The Ocular Muscles", discusses the deductions to be drawn from a study of the india-rubber ball of Landolt and from a study of his own modification of this rubber ball in reference to "tilted axes". The question of tilted axes was originally suggested by Meissner, and although it has an exceedingly important bearing on the symptomatology of ocular palsies, no current works on physiology or ophthalmology, except that of Maddox, even mention the hypothesis. They all either fail to treat of the subject of axes of rotation altogether or adopt the common-axis theory.

Through study of Landolt's india-rubber ball, Maddox very justly observed that paralysis of say the right Superior Rectus (the left eye remaining in the straightforward primary position)

produces the same effect as slight spasm of the right Inferior Rectus, if the hypothesis be true that the Superior and Inferior *Recti* have a common axis. Maddox goes on further to say that either previous clinical observations in the primary area of the motor field are incorrect or the single-axis view is no longer tenable. He makes the further strange statement that he will not attempt to say which is the case.

During fifteen years' experience in the dissecting room I have often had the occasion to demonstrate to the students that the muscle lines of the Superior and Inferior *Recti*, and those of the obliques, pass to their insertions considerably on the nasal side of a pin passed approximately in a vertical direction through the geometrical center of the eyeball when apparently in the straightforward primary position.

Since three points not in the same straight line determine the location of a plane, and since the center of origin (actual or virtual) of each muscle concerned is very considerably on the mesial or nasal side of the center of rotation, and since, further, each muscle line passes as a tangent to its point of contact with the eyeball on the nasal side of the center of rotation, the muscle planes are of necessity tilted from the vertical in the straightforward primary position of the eyeball; and a tilted muscle-plane demands an axis of rotation at right angles to the plane through the center of rotation. The muscle-planes of the superior and inferior obliques form a decided diedral angle at the center of rotation, and as each plane is oblique, their muscle-axes of rotation must be different. The same is true of the superior and inferior *recti*. It thus appears to me that even on *anatomical grounds alone* we must accept the view of a different axis for each of these muscles.

Further, the facts of clinical experience demand the hypothesis of tilted axes (diversity of axes). Lastly the simple ophthalmotrope I have devised, like Maddox's modification of Landolt's india-rubber ball, beautifully demonstrates the conformity of the tilted axis hypothesis with clinical observations in ocular palsies.

My model consists of a somewhat narrow rectangular box open at the top and at either extremity (20 centimeters long, 10 centimeters wide, and 5 centimeters high). The sides of the box support movable clamp-arms carrying perpendicular adjustable supporting rods which are for the purpose of receiving

and keeping in a fixed position the extremities of a stout steel hat-pin passed through an india-rubber ball. The hat-pin represents an innervation-axis (physiological axis) of the eyeball, the rubber ball, of course, representing the eyeball. This ball is about eight centimeters in diameter. At one place it is painted to represent the cornea. Passing through the center of the cornea to its horizontal and vertical limits (of course at right angles to each other) are arcs of the horizontal and vertical meridians (great circles) of the ball. At the posterior pole of the ball representing the *fovea centralis*, two other arcs are drawn at right angles to each other like those on the cornea. They are segments of the horizontal and vertical meridians. In the proper quadrants of these spherical right triangles at the posterior or macular pole of the ball, are drawn in red ink three arrows and in black ink one arrow. This is for the purpose of studying the character of the diplopia and indicating it to a student. The particular rubber ball that I am briefly describing represents a simple, uncomplicated paralysis of the right superior rectus. It further represents the eyeball under the influence of the *resultant* of all the remaining tensions of the eyeball, the sound eye being imagined in the straightforward primary position. This rubber ball representing the paralytic right eyeball is depicted with a tilted axis.

The adjustable *placing cup* is a very convenient device for getting the steel hat-pin (carrying a rubber ball) in the correct position on the tops of the supporting rods. It is for the purpose of holding the rubber representative of the eyeball in the correct primary position until the hat-pin is securely supported, then it is lowered and removed.

The *corneal gauge* is a support carrying an adjustable upright which is surmounted by a ring for receiving a movable watch crystal. The crystal is marked with a horizontal and a vertical line, intersecting at its center.

When the rubber ball is in the correct position over the box and its hat-pin axis is properly secured by the supporting rods, the corneal gauge is placed in the box in front of and quite close to the rubber ball and is so adjusted as to have the horizontal and vertical lines of the watch crystal in the planes of the corresponding horizontal and vertical meridians of the cornea. Any displacement of the center of the cornea in consequence of rota-

tion of the rubber ball on its steel axis, can readily be noted and its character studied. By placing the proper marks of identification for puncture and counter-puncture with a hat-pin, the same rubber ball can be used for study of ocular palsies of all the extrinsic muscles and therefore pathological rotations on axes *out of* Listing's plane. Also physiological movements on axes *in* Listing's plane can easily be studied. The model has a second corneal gauge for studying the movements of the posterior or macular pole as well as the anterior or corneal pole.

Dr. Motter said that Dr. Shute's description of his ophthalmotrope is a demonstration in applied physiology. Two facts of importance can be deduced from the result of Dr. Shute's studies: that the fundamental principles of anatomy and physiology should not be taught as if they were exact sciences, but as related to the practice of medicine; and that accurate physiological data cannot be derived from the study of pathology, which has to deal in part with abnormal physiology.

Dr. Motter thought that the very simplicity of Dr. Shute's model is proof of the great ingenuity of the maker.

Looking at Dr. Shute's models, it will be seen that, in the case of the horizontal axis, the corneal center describes an arc the radius of which is a line drawn from the point of emergence of the axis to the corneal center ; the latter therefore must always remain on the same side of the vertical meridian whether in the upward or downward position. In the case of the tilted axis, on the other hand, the point of emergence lies below the horizontal meridian and the radius being of the same length the arc described must pass from upper inner quadrant to lower outer quadrant, or *vice versa*, thus accounting for the clinical symptoms of diplopia noted in paralysis of these muscles. Certainly physiologists and ophthalmologists do not agree as to the mechanism of ocular movements. Most writers, indeed, have overlooked a paper written as long ago as 1859, which describes very well the actions of the extrinsic muscles of the eye. Dunglison, in a physiology dated 1838, held that the oblique muscles were entirely unnecessary and that all the requisite movements could be effected by the *recti*.

Dr. McKimmie said that he could not let the opportunity pass to comment upon the vast amount of study and experimental work done by Dr. Shute in perfecting his instrument and in demonstrating his theory. The contribution is a very valuable one, and especially so since the only other accurate and extensive work in English on the musculature and movements of the eye is that of Maddox.

Beyond this he had nothing further to say, as Dr. Shute had

conclusively demonstrated the accuracy of his theory. He thought that Dr. Motter's diagram was entirely correct.

Dr. W. G. Suter said that he felt indebted to Dr. Shute for the simplicity of his demonstration of the theory of the tilted axis; when seen so clearly, in the light of Dr. Shute's explanation, the wonder is that the fact has not been demonstrated before. Dr. Suter has found several authors who speak of the idea of the tilted axis, and it seemed strange to him that Maddox should have remained in doubt.

His only comment on Dr. Shute's model was that the instrument would show very well the movement produced by the action of one single muscle, or conversely the movement described by the loss of such action; whereas in ocular palsies, the movement or deviation of the eye is not opposite to the pull of the paralysed muscle, but on an axis perpendicular to the resultant of the lines of action of all the other muscles. Unless fully explained, the student might be led astray by the new ophthalmotrope.

Dr. Shute replied to Dr. Suter that the object of the instrument was precisely for the purpose of demonstrating the effect of the loss of action of *one* single muscle, the displacement being due to *the resultant of the tensions* of all the remaining muscles, and not to the inferior rectus alone.

Moreover the displacement of the cornea is in the opposite direction, in every sense, to that which would be produced by the contraction of the superior rectus alone (were that possible).

CASE OF RENAL CALCULUS, REMOVED BY NEPHROLITHOTOMY.*

By E. M. HASBROUCK, M. D.,

Washington, D. C.

The patient, a white man, age 28, was first seen by me on the night of February 10, 1905, when I found him having an attack of renal colic in the left side. He had had one or two of these attacks before, one of them only a day or two before I saw him, but it had been diagnosed as appendicitis. An opiate quieted his pains, and I instructed him to save his urine, especially the sediment. The following day he brought me small particles of gravel he had found; under the microscope these proved to be triple phosphates.

February 25 he had another attack and on the 26th another, which did not subside; the pain remained localized in the kidney.

*Reported, with specimen, to the Medical Society, January 15, 1906.

This pain continued four days, and a diagnosis was made of impacted renal calculus; this was confirmed by a skiagraph which showed the foreign body apparently in the pelvis of the kidney. An operation was advised and refused. From this time his health was good and bad by turns; at times he was in high spirits and again miserable. During this time he was on a strict diet and drank abundantly of lithia water.

June 4, he had another attack of pain which, as before, remained localized in the kidney; another on the 18th and another on the 19th. In the meantime his sufferings had caused an appreciable effect on his physical condition; countenance anxious, and he had lost 15 pounds in weight. He was afraid to go anywhere or undertake anything. He now consented to an operation and was sent to Garfield Hospital, where I operated June 21. The operation was by lumbar incision, and so sure was I from the photograph that the stone was in the pelvis of the kidney, that immediately on exposing the kidney I followed it down to the pelvis and was rewarded by finding the specimen which I show you here. Through a small slit in the pelvis the stone was grasped by the forceps and removed. The wound was closed by four Lembert sutures; a drainage tube carried to the pelvis and the external wound closed. There was no escape of urine at any time. The tube was removed on the 4th day, the stitches on the 6th and 7th, he sat up on the 10th, was out of bed on the 15th and went home on the 21st.

JOINT DISCUSSION OF DR. HASBROUCK'S CASE, RENAL CALCULUS, AND DR. HAGNER'S CASE, URETERAL CALCULUS.

Dr. Bovée said that he was glad to hear these reports of the performance of an American operation. There are many points of interest about these cases, as about all cases of urinary calculus. The differential diagnosis is always most important and often most difficult. In many cases an exact diagnosis cannot be made; even the skiagraphic findings cannot be too surely relied upon. Not only must the absence of the shadow not be held to negative the presence of stone, but it must be remembered that at times shadows, apparently of stone, may be seen in the picture and no calculus discovered at operation. He had had such a case. Edebohls had the same experience in a case in which a shadow supposed to be of a stone was found in two pictures. At the operation, no calculus was revealed but some enlarged glands

occupied a point corresponding to the x-ray shadow. Dr. Bovée had talked with several radiographers about the uncertainty of the method in the diagnosis of renal calculus, and found that they were not even in accord as to which variety of stone casts the deepest shadow. His opinion is that the x-ray is not a trustworthy diagnostic agent, and he believes that the wax-tipped catheter is superior.

A second important point to remember is the necessity of determining the condition of the renal pelvis and the functional capacity of each kidney. The state of the pelvis of the kidney has an important bearing on the treatment of the ureter after the removal of a ureteral stone. If the urine is infected, no sutures should be used in the ureteral wall; longitudinal wounds heal very well without interference, but they must always be drained. Under no circumstances should permanent sutures be used on the ureter and they should never penetrate the mucosa.

Dr. H. A. Fowler said that only a small number of cases of calculus of the lower ureter in males have been reported. He had found only 24 such cases in the literature, two of which had been in his own experience. As stone is so frequent, the wonder is that the ureteral stone is not more often found. Morris states that many cases are not discovered until autopsy, and the stones may be carried in the ureter for years without discomfort. It is an interesting feature of Dr. Hagner's case that the stone was lodged in the lower end of the ureter; stones are more often found higher up, but may be looked for at the four points of constriction in the ureteral lumen, viz: just below the pelvis, just below the iliac vessels, at the entrance into the bladder wall, and at the ureteral orifice. An important fact to be borne in mind is that patients with ureteral stone may relate a history of ureteral irritation extending over many years without more definite manifestations.

Dr. Fowler expressed the opinion that the stone exhibited by Dr. Hagner was composed of calcium oxalate. Calculi of oxalate of lime are found in four forms, which may be classified as smooth, the smoothest of all; mulberry, the roughest form; spiculated; and conglomerate, a variety showing a crystaline formation throughout. An interesting calculus which Dr. Fowler had recently been studying was made up of an ammonium oxalate nucleus, with a calcium oxalate cortex.

Dr. W. P. Carr said that the diagnosis of pelvic and ureteral calculus is sometimes easy and sometimes hard to make. He had had one case in which the fallacy of the x-ray method was marked. The radiographer who made the picture said "it was the plainest case he had ever seen," and certainly the plate showed a very distinct shadow. No stone was found at the operation, however, but a movable kidney existed, and the pain and hematuria on which the diagnosis was, in part, based, were probably

caused by a twist of the ureter. This patient's complete recovery, now extending over five or six years, completely negatives the x-ray appearances. Shadows simulating stone may be produced by opaque bodies accidently present in the clothing, by flaws in the plate, and by calcareous glands. On the other hand, certain stones throw no shadow, and so a negative plate cannot surely negative the clinical diagnosis of calculus. The use of the wax-tipped catheter is the only positive diagnostic procedure. There has been much discussion about the dangers of ureteral catheterization, but he believed that in careful hands the method is without danger and is most useful.

Dr. Merrill said that experience has demonstrated that in skiagraphy of urate and oxalate calculi the former cast a much slighter shadow, equal, approximately, to that cast by the saturated solution of sodium carbonate ; and that the latter cast a dense shadow, equal to that cast by bone. Oxalate calculi may easily be seen by the x-ray method and the diagnosis of such stones may positively be made. The urate stones require a different and special quality of ray, and in this respect the radiographer should go to the physicist for instruction. Substances do not cast shadows solely according to their density ; other factors are at work. Hence when stones less opaque to the ray are being dealt with the proper kind of ray must be employed, namely, a soft ray, which has not such penetrating powers that the illumination passes through the stone unobstructed.

He had learned that plates are at times spoiled by uneven development or "developer" spots which closely simulate the shadows cast by calculi; accordingly he always uses two plates at one exposure, and feels quite sure that when a shadow is found at symmetrical points on each plate it cannot be due to any defect in the plates themselves.

Dr. Groover said that he wished to endorse Dr. Merrill's remarks. Dr. Groover had made skiagraphs in eight cases of suspected stone ; in two of these shadows were cast and calculi were recovered at operation ; in three of the other cases with negative plates, the operation was made on the clinical symptoms, but no stones were found ; the three remaining cases so far as he knew, had not been operated on. He agreed that two plates should always be made at each exposure. He believed that skiagraphy is a valuable means of diagnosis in urinary calculus when used with caution. Dr. Groover asked Dr. Merrill if he found that the liver shadow interferes with the clear definition of a calculus when in the right kidney. Dr. Merrill responded that it does not.

Dr. Hasbrouck replied to Dr. Bovée's remarks by saying that all the precautions advocated by him had been taken in the case under discussion. The urine had been examined for infection, as had been the separate urines ; the ureter had been explored,

and the state of the pelvis of the kidney had been examined. The pelvic wound had been closed with silk sutures, and the lumbar wound was drained.

Though normal function had been restored to the side from which the stone was removed, the patient was now having trouble on the other side.

Dr. Hagner said, in closing the discussion, that he also had done everything that Dr. Bovée regarded as necessary in such cases. As the urine was not infected, he had closed the ureteral wound. In the matter of x-ray diagnosis, Dr. Hagner called attention to the fact that phleboliths are at times mistaken for calculi in the lower ureter; the differential diagnosis is made by introducing an opaque ureteral bougie, and taking a skiagraph with the instrument in place. The ureter will thus be straightened out, the bougie will cast a shadow, and the phleboliths will be seen to lie to one side or the other of the ureteral line as fixed by the bougie.

CASE OF DOUBLE APPENDIX.*

By ELLIOT C. PRENTISS, M. D.,

Washington, D. C.

I wish to present a microscopical slide made from a vermiform appendix which has a double lumen. The appendix was removed from a patient in the Urban Krankenhaus in Berlin, by Prof. Körte, and was taken to the pathological department under Prof. Benda for examination. The diagnosis before operation was chronic appendicitis. On careful examination a doubling of the appendix was not found. There is little, if any, evidence of inflammation of the mucosa. The muscular fibers around one lumen, especially the circular fibers, are greatly hypertrophied. There is a very thin layer of connective tissue between the lumina, and they are held firmly together by peritoneum. There is marked thickening of the intima of the blood vessels, some of which are obliterated.

I could find no other case of double appendix reported in literature. Numerous animals have double caeca of various forms, but the lumen of each is single. The caecum of some animals has a spiral lumen but is single. My specimen may therefore be considered a partial reversion to a lower type.

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*Reported to the Medical Society, February 7, 1906.

ADRENALIN CHLORIDE IN VARIOLA.*

By LLEWELLYN ELIOT, A. M., M. D.,

Washington, D. C.

At a meeting of the Medical Society held last October, I made the statement that variola hemorrhagica was fatal in every instance, a recovery being an impossibility. Such being my belief, I readily welcomed any port in a storm, and when adrenalin chloride was suggested I determined to test it. Did good not result, harm could not be done.

Since December 8, 1905, four cases of variola hemorrhagica have come under my care; two were distinctly confluent, one was of the discrete variety, the fourth was not classified as it was so rapidly fatal. Three died and one is still under treatment, having been admitted to hospital January 8, on the third day of her illness.

What the physiologic action of the preparation is I do not know, other than that it increases blood pressure.

In the first two cases, the effect of the adrenalin was to check the effusion of blood into the skin and into the points of eruption, but large bladders formed on different portions of the body, notably upon the legs; the skin assumed a wrinkled appearance and peeled off when pressure was made upon any part of the body, as in lifting the patient. In the third case where larger doses were given, every point of eruption upon the body necrosed; some points were arrested superficially, while others, principally those on the thighs and the legs, became deep sloughs of greater or less size, and the toes of each foot became gangrenous. Each point of sloughing was surrounded by an elevated broad border of pus, a distinct line of demarkation. The convalescence of this last patient will be protracted.

In view of the results obtained in these cases, I believe the solution of adrenalin indicated in cases of variola hemorrhagica, and will therefore employ it should occasion again present. The strength of the solution used hypodermatically, was 1 to 1,000.

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* Read before the Medical Society, February 7, 1906.

REPORT OF A CASE OF ONE-DAY PNEUMONIA IN A CHILD.*

By LOREN B. T. JOHNSON, M. D.,

Washington, D. C.

By a somewhat extensive examination of the literature, I am sufficiently convinced of the comparative rarity of crises in pneumonia occurring in 24 hours, to feel that the presentation of this case may not be without interest.

Aufrecht, writing in Nothnagel's Encyclopedia, says that the "duration of croupous pneumonia may be from one day to three weeks and in every case a complete return to the normal may occur. These extraordinarily great differences in the duration of the affection are nothing new for any one who has frequently had occasion to treat pneumonia. Naturally the number of cases which terminate in the earliest days are comparatively small; perhaps the number of cases which terminate in the first two or three days by crises would be greater than is usually supposed if there were not many physicians who are very skeptical about the diagnosis of a one-, two- or three-day pneumonia."

I have been able to find very few pneumonias terminating by crisis in one day, so far as I have searched the literature. Many of the best text books on Practice do not mention such a condition, while Osler says that he has seen no cases terminating by crisis before the third day. Thomas has described three cases of two-day duration. Tophoff, Baruch and Bernhard have each described a case of similar duration. Leube describes two cases lasting one day. Weil also describes a one-day case. Broadbent reports a case with abortive crises and permature resolution in 48 hours.

The question as to the character of the local changes which are unquestionably present has never been decided; the cause of the short duration has similarly not been determined. Speculation exists as to whether the organism may not be lacking in virulence in the particular case, or whether the body vitality may be such as to quickly overwhelm the infection.

History of the Case.—S. J., white boy, eight years of age. The child has had the ordinary diseases of infancy, and has always

* Read before the Medical Society, January 17, 1906.

been considered a delicate child, catching cold easily, though he has grown well in height. Two weeks previous to the present illness he had an attack of fever lasting about three days, for which no medical attention was received, and from which he apparently perfectly recovered. December 10, 1905, I was called to see the patient about noon, and found him in bed, apparently quite ill. He was markedly anemic, and sparely nourished. Until the preceding evening he had been perfectly well, and it was only at the mother's bedtime that he was noticed to have a very hot skin, but as he was sleeping quietly the mother was not particularly alarmed. As he did not seem to improve during the night, I was sent for. On examination he was found to have a temperature of 105, pulse 125, respiration 40. Absolutely nothing was made out on a thorough physical examination except chronically enlarged tonsils and adenoids. The suddenness of onset, the high temperature and respirations made me think of pneumonia, but the entire absence of pain, cough and all physical signs incident to pneumonia made me reserve the diagnosis. He was given a large dose of castor oil, followed by quinine. At 5 o'clock the same day I saw him again, at which time his condition was not so good, except the temperature had dropped to 102.5. At this time he was in a partial stupor though he could be aroused. The pupils reacted slowly to light; Kernig's sign was present on both sides; *tache cerebrale* and Babinsky signs were absent. Over the lower left lobe posteriorly roughened respiratory murmurs could be heard, with no rales, bronchial breathing, bronchophony or dulness present over either side.

There was no pain anywhere in the chest and only the slightest cough, possibly once in two hours. A diagnosis of probable pneumonia was made at this time. At 8 o'clock Dr. Deale saw the case with me, and just before our arrival the boy had two convulsions lasting about five minutes each, and as Kernig's sign was well developed, and the stupor rather complete, meningitis was thought of. However, an examination of the lungs at this time brought out a distinct area of consolidation with all the physical signs of a pneumonic area in the lower right lobe posteriorly, on the opposite side from which I had previously heard the roughened breathing a few hours before.

At 10 o'clock the nurse noticed that the patient was in a profuse perspiration, and after a prolonged attack of vomiting, which

was more extensive than any previous during the day, she found that the temperature was normal. He took a few long breaths and dropped off into a quiet, natural sleep with respirations and pulse nearly normal. At midnight, when awakened for nourishment, he was perfectly rational.

At my visit the next morning I was amazed to find his pulse, respiration and temperature normal, believing that we had been mistaken in the physical signs found the night before. A examination of his back, however, showed the pneumonic area still present. Bronchophony could be heard for a week, though the dulness and bronchial breathing persisted for only a few days. He had a rapid convalescence and was up and around in a few days; this was contrary to my advice, but he felt so well that his mother was unable to keep him in bed. About two weeks later he had a slight attack of indigestion lasting about three days, from which he completely recovered.

The only treatment used in this case was ice to the head to control the nervous symptoms. As much fresh air as the nurse could comfortably stand was kept in the room all the time.

Dr. Claytor said that it was not so surprising as might at first appear that in Dr. Johnson's case roughened breathing was found on the side opposite to that in which the consolidation later appeared. The harsh breathing was only relatively harsh, because early in the pneumonic process, before consolidation occurs, the partial loss of function in the affected part results in diminished breath sounds over that region, and on the opposite side the compensatory increased function and the comparative loudness of the breath sounds closely simulate harsh breathing. With pneumonia symptoms, then, an area of very quiet breathing should excite suspicion.

Dr. G. W. Wood said that he was glad that Dr. Johnson had the courage to report this case of pneumonia; a number of similar cases had come under Dr. Wood's care and he had been frequently embarrassed by making the diagnosis of pneumonia, and then having the children get well in a few days. Most of his cases were associated with symptoms of malaria, and he thought perhaps they were not cases of true pneumonia, but instances of the internal congestions so frequent in malaria or the rapid termination might be due to the greater elasticity of bloodvessels in children or to some greater antitoxic quality of the blood.

Dr. Chappell said that he was of the opinion that Dr. Johnson's case should not be called a case of one-day pneumonia, but a case of pneumonia in which the crisis occurred in one day.

He believed that the pneumonia must have persisted after the crisis.

Dr. Acker was inclined to doubt the accuracy of the diagnosis. He had seen cases of grip-pneumonia in which the crisis occurred in one day, but never had he seen the crisis so early in true croupous pneumonia.

Dr. J. D. Thomas said that criticism of the diagnosis was to be expected, as certainly such cases must be very rare. He therefore congratulated Dr. Johnson for presenting the history of the case, and expressed the opinion that the conclusions were probably correct and that the condition had been well made out. Though no one holds that the pathological conditions in the lung clear up coincidently with the crisis, the crisis may be held as marking the termination of the disease, since the dangerous symptoms abate with it and the patient's convalescence begins.

Dr. Louise Tayler-Jones related the history of a child of three years who came under her care about a year ago. The child had been taken ill, with a sudden rise of temperature and quick breathing. On the 2d day, a small spot of consolidation appeared in the lower part of the back, left side. Two days later the temperature was normal, and in five or six days from the onset the consolidation disappeared. Last summer, in Boston, she saw five cases of lobar pneumonia in children in which the symptoms disappeared on the third or fourth day of the disease. A more recent case was that of a child, taken ill, with a temperature of 106.8 and respirations mounting to 80. On the second day there were signs of consolidation throughout the lower right side. Three days later the temperature and respiration were normal.

In Dr. Rotch's clinic it was fairly common to see children with signs of lobar pneumonia apparently recover in three or four days, though physical signs remained a few days longer.

Dr. Loren Johnson, in closing the discussion, said that many cases occur with signs of pneumonia, as for example grip-pneumonia, which quickly recover with disappearance of the signs. But his case was not of this sort, the physical signs were distinctly those of lobar pneumonia. In most cases of grip-pneumonia the physical signs are vague and scattered ; but in his case there was abundant evidence of the consolidation of an entire lobe, and merever he could obtain no history of any exposure of the child to grip infection.

With reference to Dr. Chappell's criticism, Dr. Johnson said that while the physical signs persisted for several days after the crisis, there was nothing in that fact to militate against its being a one-day pneumonia, for it is well known that in all cases of lobar pneumonia the physical signs of consolidation do not disappear with the crisis ; and further he could not make his title so extensive as to completely describe the case.

He said that he quite expected to have his diagnosis assailed, and for that reason he had been careful to have it confirmed by a competent consultant. Even Dr. Osler says that he has never seen a case of lobar pneumonia in which the crisis occurred before the third day.

THE SURGICAL TREATMENT OF TYPHOID FEVER, WITH ESPECIAL REFERENCE TO PERFORATION OF THE BOWEL AND HEMORRHAGE.*

By GEORGE TULLY VAUGHAN, M. D.

Washington, D. C.

The first recorded operation for perforation of the intestine in typhoid fever was done by the late lamented von Mikulicz, twenty-one years ago, and up to the present time it is possibly safe to say that not more than one thousand operations of this kind have been performed.

The best article on this subject and the most complete, is that of Harte and Ashhurst of Philadelphia, published in the *Transactions of the American Surgical Association* for 1903, in which is published a table of all patients operated on up to 1903, namely, 362, collected from operators in various parts of the world. Dividing the twenty years which have elapsed since the first operation into lustra of five years each, and comparing the results in each lustrum, they show a remarkable reduction in the mortality, namely, from 90 per cent. to 69.2 per cent. In the first lustrum 10 patients were operated on with 9 deaths; in the second lustrum 16 cases were operated on with 14 deaths; in the third lustrum 100 cases were operated on with 72 deaths; while in the fourth lustrum, ending with the year 1903, 166 were operated on with 115 deaths.

Frequency.—The frequency of perforation is variously estimated by different authorities from 1.3 to 11 per cent. of all cases of typhoid fever. In 10,802 cases there were 321 perforations, in round numbers about 3 per cent.

Causes of perforation.—The primary cause of perforation is, of course, the sloughing incident to ulceration of Peyer's patches. There are also certain predisposing causes, as sex, perforation being four times as frequent in the male as in the female. *Stage of*

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* Read before the Medical Society, January 24, 1906.

the disease, the large majority occur during the third week of the disease, then comes the second, then the fourth week, then the fifth, then the sixth and first weeks, in which perforation seems about equally frequent; then later periods, even into convalescence. *Severity of the disease*, here opinion is divided. Harte and Ashhurst believe it is more apt to occur in the severer forms of the disease. Judging from my own experience and observation perforation occurs as frequently in mild as in severe cases. Naturally one would expect perforation to occur more frequently in those cases in which the ulceration is most severe, but the degree of local lesion bears little relation to the general symptoms. Nor does the number of ulcers seem to bear any relation to the probability of perforation, which is frequently seen in cases with a very small number of ulcers.

The immediate cause of perforation is often difficult to ascertain. At other times it may be attributed to a sudden motion in bed, to vomiting, to straining at stool, to contraction of the muscles caused by the cold bath, according to Harte and Ashhurst, to excessive tympany, distention from other causes, and peristaltic action from purgatives. In two of my cases perforation occurred soon after the administration of purgatives, in the one case magnesium sulphate and in the other castor oil. In another case perforation occurred after imprudent eating.

Symptoms.—Many symptoms are given but the diagnosis is usually made on very few. In doubtful cases all the information which it is possible to obtain is needed to clear up the diagnosis. Pain, tenderness, rigidity of abdominal muscles, hemorrhage from the bowels, chill, vomiting, sweating, and changes in the countenance, temperature, pulse, leucocytes, dulness, tympany and stools—all may occur as symptoms. Pain, tenderness, rigidity and symptoms of shock, such as anxious or greyish countenance and rapid pulse, are the most reliable symptoms, and when coming on suddenly and all present, establish the diagnosis beyond a reasonable doubt.

Pain is sometimes absent or slight in apathetic patients, but even in these, tenderness can usually be discovered on palpation. At other times the pain may be as severe as in biliary or renal colic. In one of my patients, Case IX, such was the case and it lasted eight hours, with slight intermissions. There are all degrees

between these two extremes. It is usually in the right inferior quadrant of the abdomen but may be diffused all over the abdomen. The pain is described as sharp, stabbing, cutting, burning, aching, or as a cramp, usually constant but with waves of greater intensity at intervals.

Tenderness is probably the symptom most commonly present, but it is often present in the absence of perforation. It is usually most marked in the right iliac fossa, but after peritonitis has set in may exist all over the abdomen.

Rigidity is not reliable, but when present is of great value, especially if limited to the right side.

The *change in countenance* is of great value, but is not always present. It varies from an expression of uneasiness or anxiety to one with hollow eyes, pinched nose and lurid countenance.

The *pulse* nearly always increases in rapidity. In cases attended with much shock the pulse becomes rapid, 120 to 160, weak and thready. With little or no shock, the pulse may not increase more than ten beats to the minute, until peritonitis sets in.

Sweating usually occurs with the pain, especially if severe, or follows soon after.

Temperature.—While in many patients the temperature falls, the most certain thing about it is its rise after perforation. If there is much shock, the temperature falls from one to six degrees Fahrenheit and then, unless the patient dies in collapse, it rises again beyond the point from which it fell. The temperature fluctuates so much in typhoid fever that a fall of one or two degrees is of no significance unless attended by other more reliable symptoms. Even a drop of several degrees may mean a hemorrhage and not a perforation.

The value of *leucocytosis* as a symptom of perforation is still a mooted question. Its presence is sometimes of value as corroborative evidence while its absence should not mislead one to conclude that no perforation is present.

Hemorrhage from the bowels occurs in quite a large percentage of perforations. B. W. Goodall, in a study of 96 cases of perforation, found that hemorrhage preceded perforation in 20.8 per cent. Of course hemorrhage also occurs in many cases that do not perforate. Probably a careful examination of the stools would show the presence of blood in the majority of cases previous to perforation.

Vomiting at the time of perforation, or within a few minutes after, occurred in 8 of my 9 cases. I believe that vomiting, coming on soon after pain in the bowels or without any other apparent cause, is a valuable corroborative symptom.

Chill.—Chilly sensations, shivering, or a marked chill occur in a number of cases. It was present in at least 33⅓ per cent. of my patients, and Goodall found it present in 26 per cent. of his 96 patients.

Dulness on percussion and tympany are unreliable symptoms except where there is absence of liver dulness, and even this may be caused by the presence of gas within the intestines. Dulness in the dependent portion of the flanks, especially the right, sometimes occurs after perforation and the accumulation of fluid in this region.

Stools. It is said that a change from constipation to diarrhoea, or *vice versa*, often signalizes the occurrence of perforation. The cases in which I have noted this symptom, three in number, were characterized by the discharge in rapid succession of from three to five stools, preceded by pain in the abdomen.

Diagnosis.—It is sometimes impossible to make the differential diagnosis from appendicitis, perforation of gastric ulcer, peritonitis without perforation, and gallbladder infection, but as all of these conditions require operation, it is not a matter of such great importance. Gallbladder infection can usually be distinguished by the location of the pain in the epigastric or hypochondriac region. In a patient operated on by me for perforation of the gallbladder during the course of typhoid fever there was no difficulty in making the diagnosis of gallbladder infection and finally rupture, chiefly from the location of the pain and tenderness.

Prognosis.—That recovery from perforation can take place without operation has been proved, but such a result is in the nature of a surgical curiosity on account of its extreme rarity. Hare reports a patient, quoted by Goodall, on whom a *post mortem*, made six weeks later, death occurring from another cause, showed that a perforation had healed. Conservative, or over sanguine, estimates, place the mortality without operation at 90 per cent. at least. The table referred to of 362 patients operated on, gives a mortality of only 74.03 per cent. This percentage may perhaps be a little too low on account of the fact that many

unsuccessful operations have not been published. Some operators have in a small number of cases had a high percentage of success. Thus of Shepherd's three patients, all recovered. On the other hand, other operators have had a high percentage of deaths —of Munro's 12 patients all died. Those who have had the largest experience have had average results. Harte in this country operated in 20 cases with 4 recoveries. Lavroff of Russia operated on 33 patients with only 4 recoveries.

Harte and Ashhurst sum up the conditions which give the most favorable prognosis as follows: "Girls from ten to fifteen years of age, the perforation occurring in the first week of the disease when the constitution is still strong, or in convalescence when the frame is already re-established ; who have been operated on in the third hour after perforation, the single perforation being pinhead in size, within a few inches of the caecum or in the appendix ; and when neither fecal extravasation had occurred nor adhesions were present."

Haggard collected, published and unpublished, the history of 137 patients operated on with 43 recoveries, a mortality of only 69 per cent.

Treatment.—After all that has been said the argument could scarcely be much stronger in favor of operation in every patient with typhoid perforations unless already dying, as the patient has everything to gain and nothing to lose. Laparotomy should be performed just as soon as possible after the perforation occurs, within thirty minutes if possible, before peritonitis begins. Those who have had the largest experience prefer a general anaesthetic and with them I fully agree. Local anaesthesia may have a limited field in patients in a semi-comatose condition. The incision should be made through the right rectus muscle, the caecum located and the examination of the small intestines should begin at that point. Openings should be closed when small—less than ¼-inch—with one row of silk sutures which inverts the peritoneal coats, or by a purse-string suture. Larger openings should have two rows of sutures—one through all the coats near the edges of the opening, the other through all the coats except the mucous, inverting the first row. The continuous glover's suture is as good as any, and better than most of the complicated sutures which have been invented. The line of sutures should be at right angles to the long axis of the bowel in order to avoid constric-

tion. Resection may be necessary on account of bad condition of the bowel. Irrigation with salt solution should be done if the contents of the intestines have escaped in quantity or when peritonitis is extensive, and drainage should be provided for. In limited peritonitis with little or no escape of intestinal contents, irrigation may be omitted.

It may not be considered out of place at this point to suggest some method of treatment of intestinal hemorrhage in typhoid fever, from which, according to some authors, as many patients die as from intestinal perforation. It has been estimated that from 30 to 50 per cent. of those who have intestinal hemorrhage die from the hemorrhage. I believe that the mortality would be lowered to something like 5 per cent. by timely operation. I would by no means advise operation in every case of hemorrhage, but when the patient's condition becomes serious, either from a sudden copious hemorrhage or from repeated small hemorrhages, no time should be wasted in the use of cold applications and the administration of morphine, ergot or adrenalin, but the abdomen should be opened at once and the bleeding point secured by sutures. The bleeding comes from an ulcerated Peyer's patch, therefore those patches should be carefully examined and those most affected should be excised and the intestines sutured, or the hemorrhage could be arrested by telescoping a section of the bowel so as to compress the ulcerated surface, using sutures to keep the invagination in position.

Indeed the time may come when typhoid fever will be treated as a surgical disease from the beginning. As the primary infection is in the glands which make up Peyer's patches, and the septicemia which constitutes the general symptoms is the result of absorption from the point primarily infected, why not, as soon as the diagnosis is established, open the abdomen, excise the affected Peyer's patches, or if many are involved excise the lower part of the ileum—thus removing the depot of infection in the same way that we remove the appendix, the gallbladder, or glands from the neck, axilla, or groin for various forms of infection.*

*Since writing the above I have observed the following extract from the *Berliner Klinischer Wochenschrift* in the *Jour. Amer. Med. Ass.*, January 20, 1906.

"The patient was a young woman who was shot in the abdomen, the injury requiring resection of the ileum for 98 centimeters or about one yard. The course of the case showed that the injury had been received during the onset of typhoid fever. An epidemic of typhoid fever prevailing at the time was of an unusually severe type, but the disease was very mild in this case, possibly owing to the fact that the part of the bowel removed was exactly the part generally affected by the typhoid process."

CASE I.—H. M., male, colored, aged 35, native of Maryland; admitted to Emergency Hospital on June 24, 1900, with a history of having been taken suddenly about noon with a severe pain in the abdomen, at first generally distributed but finally becoming worse on the right side. He vomited several times and had chilly sensations. Examination six hours after the symptoms came on revealed the following symptoms: abdomen hard and rigid, the rigidity being distinctly more marked on the right side, temperature 101, pulse about 110. He stated that he had been as well as usual when the severe pain came on, but that he frequently suffered from pain in the bowels which he thought was colic. A diagnosis of appendicitis was made and immediate operation advised, but this was declined until next morning, when the temperature had fallen nearly to normal but there was still considerable pain in the bowels.

About 18 hours after the symptoms began ether was given and the abdomen was opened on the right side. As soon as the peritonenm was opened, a small quantity of thin yellow fluid, much like pea soup, escaped. No adhesions could be felt, and the first coil of intestine which presented was withdrawn. This was the ileum, considerably swollen and inflamed, with patches of lymph on it, and about three feet from the colon a perforation was found in the part opposite the mesentery. The opening was round and about two millimeters in diameter. It was excised and closed transversely to the long axis of the bowel with three rows of fine silk sutures, so many rows being used on account of the great friability of the tissues. The appendix was removed, although nothing was found wrong with it except that it shared in the general inflammation which existed over a limited area in the peritoneal cavity. No irrigation and no drainage. The patient had slight elevation of temperature for several days after the operation, but was discharged recovered at the end of 19 days.

CASE II.—*Perforation and Cancer of the Colon.*—Referred by Dr. S. S. Adams.—R. C., white, male, age 50, blacksmith; was admitted to Georgetown University Hospital April 15, 1902, having been ill three weeks with typhoid fever. On admission the pulse was 96, temperature 100.6, respiration 20, mind clear; tongue pointed, dry and tremulous. He was ordered calomel ¼ grain every half hour till 2 grains were taken, to be followed by half an ounce of magnesium sulphate. This produced three actions of the bowels between the 15th and the 17th of April. Early in the morning of the 17th he was suddenly seized with severe pains and cramps in the bowels, followed by vomiting. These symptoms continued all day until 11 o'clock at night. His temperature about one hour after the perforation at 8 A.M., was 100.4; at 2.30 P.M., 102.4; pulse 124; at 6 P. M., temperature

100, pulse about the same; at 11 P.M., when I first saw him, the pulse was over 160 and could not be accurately counted; he was thirsty, vomiting about every five minutes, but his mind was perfectly clear. He stated that the pain was not so severe as it had been in the morning. The abdomen was soft throughout, not distended, but was tender to pressure in both iliac regions. There was dulness on percussion in the right iliac fossa extending up to the liver, and tympany on the left side of the median line.

A diagnosis of perforation was made and immediate operation advised and this was accepted. Under ether sixteen hours after perforation, the abdomen was opened through the right rectus muscle, evacuating a large quantity, at least 1,000 c.c., of pea-soup-like fluid. There was general peritonitis, and an opening large enough to admit the tip of the little finger was found in the ileum, about twenty inches from the caecum. This was closed with one row of silk sutures. A tumor was then felt in the sigmoid flexure of the colon, and on bringing it forward for examination the finger was accidentally thrust through the diseased gut. As there was not time to resect and anastomose the tumor, an adeno carcinoma was removed, the lower portion of bowel closed and the upper segment was brought through the abdominal wound, making an artificial anus. The abdominal cavity was irrigated freely with salt solution and strips of gauze put in for drainage. The patient stood the operation well but death occurred 33 hours later. The necropsy showed general peritonitis, enlarged spleen, and 12 ulcers in the lower part of the ileum.

Case III.—*Two Perforations.*—F. D. H., white, male, aged 30, laboratory attendant; was admitted to Providence Hospital with typhoid fever in June, 1902. June 14, in the third week of the disease, a dose of castor oil was given. June 15 he had a moderate hemorrhage from the bowels and the temperature fell from 102 to 101, pulse kept about 100. The patient did not suffer much, but stated that just before the hemorrhage occurred he felt something in his abdomen give way. A diagnosis of perforation was made but was not concurred in by my colleague, so that I did not insist on operating. June 16 he had another hemorrhage but his symptoms were not alarming, although there was now pain and tenderness in the right iliac region. June 17 his condition was about the same, with tenderness, pain and swelling. June 18, early in the morning, he began to vomit and the pulse was up to 140, mind perfectly clear. There was no longer any doubt as to the existence of perforation, and under ether, three days after perforation, the abdomen was opened through the right rectus muscle. There was general peritonitis, the exudate being thick and attached to intestine and omentum. Two perforations, one large enough to admit the tip of the little finger, the other slightly smaller, were found in the ileum about two feet

from the caecum. The openings were so near together and the intestines so much diseased that the segment was excised in a V shaped piece down to, but not through, the mesenteric portion, and the ends united with silk sutures. A badly inflamed Peyer's patch near the caecum was turned in with sutures. About two feet of the ileum were in bad condition, presenting numerous dark red swellings, with enlarged mesenteric glands. Irrigation was used and drainage was provided. Death occurred from exhaustion, three hours after the operation.

CASE IV.—*Perforation of the Appendix.*—A. J. P., white, male, aged 46, native of Maryland; admitted to Georgetown University Hospital in December, 1903. He did well at first, but finally developed an *otitis media* of the right side. December 11, in the fourth or fifth week of the disease, he complained of pain in the abdomen, vomited, had diarrhoea, was tender to pressure in the right iliac fossa. Pulse 120. December 12 the symptoms continued, abdomen swelling, and vomiting becoming stercoraceous. December 13 symptoms about the same and it was decided to operate, more than 48 hours after the perforation took place. Under ether the abdomen was opened through the right rectus muscle, evacuating a large quantity of turbid fluid with a fecal odor. Adhesions and considerable plastic lymph were found in the right iliac fossa. Signs of ulcers were seen on the ileum and caecum and a perforation of the appendix was seen near its distal end. The appendix was removed and the opening closed, and one of the ulcers in the ileum, which was so nearly through that a probe was easily passed through, was also closed by turning in with sutures. Irrigation was used and the abdomen closed without drainage. Death occurred twelve hours later.

CASE V.—Referred by Dr. J. D. Thomas.—T. H., white, male, aged 23 native of Pennsylvania, painter, admitted to Georgetown University Hospital June 16, 1904. His temperature ran along between 102 and 104.6, pulse from 100 to 110. He had diarrhoea. About 17 days after the disease began he was suddenly seized at 12.30 P. M., June 23, with sharp pain in the abdomen, generally diffused, with restlessness and dryness of the mouth. These symptoms were soon followed by four copious stools and considerable diminution of the pain. The pulse and temperature were about as in the morning, there was slight abdominal tenderness but no marked rigidity. At 4.30 P. M., the patient was again taken with acute pain, this time in the right iliac fossa. In half an hour the pulse increased from 108 to 128 and the temperature fell from 102 to 101 but afterwards was above the original point. The face was pale and pinched in appearance and the patient was restless. There was marked tender-

ness in the right iliac fossa and some rigidity of the right rectus muscle. The patient complained considerably of the pain, which he described as starting in the right iliac fossa and radiating throughout the abdomen. A diagnosis of perforation was made and at midnight, under ether, the abdomen was opened, 11½ hours after the perforation occurred. Considerable turbid fluid escaped from the peritoneal cavity, there was general redness of the intestines and some lymph present. About 5 inches from the caecum an opening about a millimeter in diameter was found in the ileum from which issued gas and fluid. The opening was sutured transversely, the peritoneal cavity irrigated with salt solution, and the abdomen closed without drainage. Death occurred June 27, four days later, from peritonitis.

Case VI.—W. L. B., colored, male, aged 35, native of Virginia, Pullman car porter was admitted to Georgetown University Hospital November 18, 1904. He had been sick since October 23 but did not keep his bed, being alternately up and down. November 17, about 25 days after his illness began, he vomited ; in the evening after eating supper, consisting largely of fruit, he felt a sudden sharp pain in the abdomen about the region of the umbilicus, which continued in some degree for the next two days. The diarrhoea became worse and he walked into the hospital next day. At that time there was constant pain and tenderness in the abdomen, especially in the right iliac region, the abdomen was considerably swollen and tympanitic, liver dulness absent, pulse 98, temperature 102.6. Right rectus a little more rigid than the left. With the imperfect history given by the patient a positive diagnosis could not be made previous to operation, but it was decided to be either typhoid perforation or appendicitis with perforation. Operation was performed November 19, about 36 hours after the perforation occurred, the abdomen being opened through the right rectus muscle. A large quantity of turbid green fluid escaped, the intestines were found all intensely congested with a good deal of lymph about the lower part of the ileum. An opening about ⅛ inch in diameter was found in the ileum about two inches from the caecum. The walls of the intestine were swollen and thick and the mesenteric glands enlarged. Two or three other thickened patches, evidently Peyer's patches, were felt in the walls of the bowel. The opening was sutured with two rows of fine silk, the abdomen irrigated and closed with drainage. The Widal test was positive. There was a slight discharge of pus through the tube and the patient had an evening rise of temperature for 16 days, but otherwise his convalescence progressed without incident and he was discharged recovered December 16.

CASE VII.—Referred to me by Dr. W. C. Gwynn.—E. F. R., white, male, aged 43, native of New York, priest; admitted to Georgetown University Hospital in January, 1905. He had been sick about two weeks, the exact time was not known, as the illness was at first very slight and was thought to be grip, especially as he gave a negative reaction to the Widal test. The temperature had been running along from 99 to 102 and pulse from 80 to 100, when on January 10, at 8 P. M., he was suddenly seized with severe pain in the abdomen, at first diffused, but later locating in the right iliac fossa. At that time the pulse was 75 and temperature 101.2. Three and one half hours later the pulse was 86 and temperature 100. Next morning he vomited twice and the temperature was 101 and pulse 84. At 5 P. M., 21 hours after the perforation occurred, his condition was as follows: Abdomen distended, tender all over but especially so over the right iliac fossa where there was also dulness on percussion; tongue dry, pointed and edges red; pulse 96, temperature 100; he seemed apathetic and looked quite ill. A diagnosis of perforation was made and immediate operation advised. Under chloroform, 23 hours after the perforation occurred, the abdomen was opened. Thin pus and gas escaped, patches of lymph were numerous, the omentum was thickened, the mesenteric glands were enlarged, and an opening about ⅛ inch in diameter, was found in the ileum about six inches from the caecum. This was sutured and a thin place over an ulcer in the caecum was turned in by a row of sutures. The abdomen was irrigated and closed with drainage. Death occurred just 36 hours later, from general peritonitis.

CASE VIII.—Miss E., white, age 24, native of Maryland, nurse; was referred to me by Dr. Clark. She had been ill with typhoid fever 32 days; temperature running along from 102 to 103, occasionally reaching 104; not much diarrhoea nor delirium, but there was a little cloudiness of the mind. On the 32d day of her illness, at 11 A.M., September 10, she complained of severe pain in the abdomen. This was soon followed by three or four large stools, the temperature rose from 101 to 102, the pulse also to about 140; she had a chill and vomited. When seen at 3.30 P. M., 4½ hours after the perforation her condition was as follows: She lay in a semi-conscious condition but could be easily aroused; breathing rapid; rectal temperature 104; pulse 130 and scarcely preceptible at the wrist; abdomen tender all over, worse in right iliac region, somewhat swollen, decidedly tympanitic; no dulness except very low down on the sides, no change in liver dulness; right rectus more rigid than left. The leucocyte count only 4,000. A diagnosis of perforation and peritonitis was made and immediate operation advised. The abdomen was opened under ether 5½ hours

after the perforation had occurred. A large quantity of straw-colored fluid was found in the peritoneal cavity and plastic lymph over the lower part of the ileum. An opening about $\frac{1}{12}$ of an inch in diameter was found in the ileum, about six inches from the caecum. It was closed with fine silk sutures. The mesenteric glands were enlarged and several ulcers were felt through the bowel walls, but no sign of perforation was found elsewhere. The peritoneal cavity was irrigated and the abdomen closed with drainage. Death occurred ten hours later.

Case IX.—Referred by Dr. S. S. Adams.—W. M., white, male, aged 28, native of New York, engineer, was admitted to Georgetown University Hospital October 5, 1905. He stated that he had been sick with typhoid fever in a Baltimore Hospital from March 5 to April 14, when he left recovered. The last of September he was again taken ill with the same disease, and when admitted to Georgetown University Hospital October 5, he had a temperature of 103 and a pulse of 100. Patient seemed to be doing well until October 11 at 9 A.M., when he was taken suddenly with severve pain in the right side of the abdomen. He vomited once and had a chill. The temperature fell very slightly from 101 to 100.8, then rose very decidedly to 104. Pulse rose in less than an hour from 90 to 130. Marked tenderness and dulness over the right side of the abdomen; tympanitis over the left side. Leucocyte count, 8,000.

The diagnosis was perforation of the intestine and immediate operation was advised. To this the patient, whose mind was perfectly clear, would not consent until eight hours had elapsed. The operation was done at 5 P.M., the patient having suffered all day. Ether was first given, but as it seemed impossible to thoroughly anesthetize the patient with it, chloroform was subsituted and acted well. Considerable turbid fluid and long flakes or strings of coagulated albumin or casein escaped on opening the peritoneum. Three perforations were found in the ileum, one about four inches from the caecum, about $\frac{1}{25}$ inch in diameter; a second about six inches distant from the first, quite large, fully $\frac{3}{4}$ by $\frac{1}{2}$ inch, involving half the circumference of the bowel, with rotten edges; and a third about 12 inches further and about the same size as the first one described. All were sutured with fine silk, the peritoneal cavity was irrigated, and the abdomen closed with drainage. There was an almost immediate improvement in the patient's condition. Next morning his temperature was little above the normal and his pulse was only 108. He had involuntary evacuations of the bowels for five or six days and the fever continued two weeks longer, ranging from normal to 102.4. The wound suppurated freely but healed in three weeks, and he was discharged recovered, November 5.

Dr. W. P. Carr congratulated Dr. Vaughan upon the large measure of success he had attained in the surgery of typhoid fever and upon the paper itself. So far as Dr. Carr was aware, Dr. Vaughan's cases were the only ones in this District which had recovered. Dr. Carr himself had operated on two cases; one was apparently recovering, but died from suppression of urine.

Dr. S. S. Adams wished to go on record as not having been responsible for the administration of calomel and castor oil in certain cases referred by him to Dr. Vaughan, and mentioned by the latter in his report of cases. Dr. Adams had agreed with Dr. Vaughan in the diagnosis of perforation in all the cases except one that they had seen together. In that case, the credit of the diagnosis should be given to Dr. Prentice Wilson.

The diagnosis presents the greatest difficulty in these cases. The leucocyte count is a valuable aid in this respect, but Dr. Adams protested against waiting for a leucocyte count when the picture of perforation is otherwise clear. In many cases it is practically impossible to make the diagnosis at all, no matter how many diagnostic points are laid down in the text books. In one case of his experience there had been no abdominal pain, nor any abdominal tenderness, but the patient had complained of intense pain in the lower rectum.

The Society should heartily commend Dr. Vaughan for his plea for immediate operation, which offers the only hope in this accident. In Dr. Adams' opinion the great majority of cases of hemorrhage are unattended with perforation. Of course, if the two accidents should occur coincidently, operation should be done for the perforation, but he could not commend operation for hemorrhage alone; patients too often recover from the latter condition without surgical interference.

Dr. Chappell said that he had been reading upon the subject of typhoid perforations last summer, and the conclusion that every authority reaches is that the operation must be done early; unless both diagnosis and operation are made early the prognosis is hopeless. The classic symptoms of perforation must not be waited for; the picture of collapse does not appear until it is too late to hope for any benefit from operation. Surgical success, then, depends upon the ability to make an early diagnosis; it would seem that the operation is done sometimes with the single symptom—pain; sometimes, pain with rigidity. As he had had cases with sudden, severe abdominal pain, simulating perforation, but with no subsequent symptoms to indicate the accident, he was unwilling to make the diagnosis on pain alone. Still the physician is confronted with the fact that if the perforation exists for 36 to 48 hours unrecognized, it is then too late to operate, and the patient may as well be abandoned to his fate.

Dr. J. P. Miller said that he wished to encourage the surgeons in the work of operative intervention in the accidents of typhoid.

Speaking from memory as his only guide, he said that he believed that Prof. W. W. Keen's first 17 cases all proved fatal, but that Keen's mortality has since been reduced to 85 per cent. Dr. Miller wished that the essayist had been entirely positive as to the diagnoses in his cases; the Widal reaction and the diazo test are such precise modes of differentiation, that there should be no difficulty in recognizing typhoid fever. Dr. Miller had been surprised to find that Dr. Osler states that the perforation in enteric fever is almost never found through the ulcers; Dr. Vaughan seemed to have had the same experience. On this account the spot of perforation is often very difficult to find.

Dr. Miller could not endorse the idea of resection of the bowel as a cure for enteric fever, nor even for the hemorrhage of typhoid. Bleeding is very frequent—more frequent than is suspected by those who do not systematically examine the stools; it does not by any means indicate perforation, and therefore he condemned operative intervention in this event.*

Dr. Jos. Taber Johnson said that he remembered very well Dr. Keen's paper on the Surgery of Typhoid Fever, which was read before this Society. His remarkable crusade in behalf of immediate operation in these conditions has been vigorous and productive of good. A curious fact in connection with his ad-

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*At the meeting Feb. 7, Dr. Miller made the following statement in correction of his discussion of Dr. Vaughan's paper:

In my endeavor to discuss Dr. Vaughan's paper, it will be remembered I had prefaced my remarks with the statement "I must recite from very distant, and somewhat dimmed memory" when quoting Dr. Keen. It had been nearly seven years since I read Dr. Keen's paper and his quotations from Fitz, both so rich in data that I thought it strange in Dr. Vaughan not to refer to them in giving us a resumé of the surgery of perforations in typhoid fever.

In quoting Dr. Keen I was in error, widely as to his personal work but closely correct as to what he reported of total results, up to that date, in operation for intestinal perforation in typhoid fever, which lingered in my memory as having been his own work.

He tabulated 83 operations, with a mortality of 80⅔ per cent. and recoveries 19⅓ per cent.; but a few surgeons had a record of 30 per cent. and some even 40 per cent. recoveries.

What he has to say of present statistics, including Dr. Vaughan's results, are stated in a personal letter from him which I desire to submit as a part of this discussion.

Apropos of my remarks on the difficulty of making a diagnosis of *perforation* in typhoid fever, I beg to submit Dr. Fitz's statement quoted by Keen: "Since perforation of the intestines in typhoid fever may take place without any suggestive symptoms, and since suggestive—even so-called characteristic—symptoms may occur without perforation having taken place, it must be admitted that recovery from such symptoms is not satisfactory evidence of recovery from perforation."

Leucocytosis, while contributory evidence, is not absolute. The leucocyte count is usually low in uncomplicated typhoid,—it may be below 2,000 and has been found below even 1,000 at the end of the third week. On the other hand, Cabot reports four cases in which the count was 11,000, and ran as high even as 17,500 per c.c. without any other than typical typhoid lesions.

vocacy of surgical intervention in typhoid perforations is that he himself had operated only once in this condition and the patient died. Dr. Johnson thought that Dr. Miller must be mistaken in the statement that perforations do not usually occur through typhoid ulcers; Dr. Johnson's opinion is that only exceptionally do they occur elsewhere. As regards the statistics of the operation for perforation, when 25 per cent. of the cases are saved by its employment it must surely be commended; certainly these figures cannot be duplicated in operations for cancer of the uterus. He commended Dr. Vaughan's paper and complimented him on his results.

Dr. Hagner said that the most important feature of the cases under discussion is early diagnosis. At Johns Hopkins, 40 per cent. of the cases operated on in the first 12 hours recover and with each hour the mortality increases. The leucocyte count is a valuable guide, and its use should not be criticised as consuming too much time; as a matter of fact, the white cells may be counted while the patient is being prepared for the operating room. The degree of leucocytosis is not important nor significant, however, unless the count previous to the accident has been known; an increase in the leucocytosis is the important point. As regards operating for hemorrhage, he thought the idea rather impracticable. How could the bleeding point be determined after

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Cases are also reported where perforation has been suspected, though the count showed no increase in leucocytes, but the autopsy revealed perforation. Furthermore, the count increases in complications other than perforations: Phlebitis, and *otitis media*, when complicating typhoid have shown the count 14,000 and 16,000 per c.c.

Two things have impressed me as most remarkable: 1st. That severity of symptoms bears no relation to frequency of perforations. 2d. That perforations are not frequently found in ulcerated Peyer's patches. In Osler's Practice, pp. 9, 10, he tabulates 22 perforations among his own autopsies, and chronicles the 2,000 Munich autopsies, with 114 perforations. Osler says, precisely: "It is not common for an entire Peyer's patch to slough away, and a perfectly ovoid ulcer opposite to the mesentery is rarely seen. The base of a typhoid ulcer is smooth and clean, being usually formed of the submucosa or muscularis. In only a few cases is the perforation at the bottom of a clean thin-walled ulcer. In one instance it had occurred two weeks after the temperature had become normal."

Philadelphia, Jan. 27th, 1906.

My Dear Dr. Miller:

I send you with this a couple of reprints of my last paper on the Surgery of Typhoid Fever. It is rather curious that it has so happened that every case but one of typhoid perforation appearing in the Jefferson Hospital has occurred during the service of the other surgeons, and I have only had *one case* personally, with, I regret to say, a mortality of 100 per cent.!

I do not know at all who the Philadelphia surgeon is that you refer to who had first 17 fatal cases and then a number of consecutive recoveries. Dr. Vaughan's statistics of three recoveries in nine cases is about the average recovery rate at the present time.

I have been very much misquoted in reference to my opinion on the time for operation. My opinion is stated clearly, I think, in this latest publication, and if you will look at my book on the Surgery of Typhoid, pp. 225–7, you will see exactly what I said in 1898. Remember that this was written when there were only 83 cases from which to draw conclusions.

I remember very well the case which was the text of Dr. James C. Wilson, as quoted on page 221 of my book. He and I were together on this first case in America in which operation would have been done but for the fact that the patient's improvement prevented operation.

Yours very truly,

Signed, W. W. Keen.

the bowel had been exposed? Experience teaches that the source of hemorrhage cannot always be discovered after laying the bowel open *post mortem*.

Dr. J. Ford Thompson said that about a year ago the subject of typhoid perforations had been well discussed in the Society. He was surprised to learn that any doubt should remain as to the propriety of laparotomy in these cases. In obscure cases, of course, hesitancy is permissible, and many cases are obscure. In a recent instance he had been called to see a patient who presented signs of perforation, but as the patient recovered without operation, no accident could have occurred. Most of the cases upon which he had operated have been very plain, but the operation in each instance was done late and his mortality as a consequence has been high. Dr. Vaughan's paper was open to criticism because of its advocacy of laparotomy for the relief of intestinal hemorrhage. Dr. Thompson did not think such a procedure would be in any sense proper. He also condemned the proposition of excision of any portion for the purpose of aborting typhoid fever. As well try to abort syphilis by the excision of the chancre. The suggestion savors too much of frenzied surgery. He was distinctly in favor of immediate operation for perforation; it offers the only hope. The later statistics are remarkably good in early cases; the prognosis is much less hopeful after the first 24 hours. But the diagnosis must be clear before laparotomy should be done.

Dr. I. S. Stone said that the important points in the matter of typhoid perforation are: The diagnosis and exact mode of procedure after the diagnosis is made. He thought that in the treatment of typhoid the symptom, vomiting, should be carefully combatted; vomiting is more apt to cause perforation than to result from it. He remembered a case in which another physician had given lobelia. Perforation occurred in a proxysm of vomiting, and death ensued in a few hours. At the *post mortem* examination, there was found not the slightest effort at any reparative process. In this connection, his only criticism of Dr. Vaughan's paper was that no mention was made of the *post mortem* appearances of the bowel after operation. He asked Dr. Vaughan to state whether in his cases he had found any beginning repair, any exudation of lymph. Does typhoid fever prevent lymph formation and the resulting protection of sutures? Is there any attempt to wall off the damaged area in this disease? After all, the problem is to get the surgeon to the patient early and to operate at once. He commended Dr. Vaughan for much encouragement in the surgery of typhoid fever.

Dr. Reyburn complimented Dr. Vaughan upon the excellent results he had attained, and compared his small number of cases most favorably with the larger statistics in the literature. He felicitated the profession upon this advance in aseptic surgery, and

desired to add his voice to the advocacy of surgical intervention in the perforations of typhoid fever. As hemorrhage is not necessarily fatal and not always even dangerous, he did not endorse the idea of laparotomy for that condition.

Dr. Fremont-Smith said that an additional aid in the diagnosis of intestinal perforation is secured in the use of the Riva-Rocci apparatus to record the great fall of blood pressure which results from the accident. Koplik had recently reported two cases of enteric fever in which laparotomy was done for suspected perforation. The bowel in both cases was found to be intact, and the patients recovered in both instances from both the operation and the fever. In view of the safety of laparotomy, and the hopelessness of delayed operation, is it not better to operate upon the occurrence of suspicious signs rather than wait too long for indubitable evidence?

Dr. J. D. Thomas said that one of the cases reported by Dr. Vaughan had been promptly recognized as perforation by an interne at the Georgetown Hospital, and the diagnosis had been confirmed by himself. The delay was occasioned by the patient's refusal to allow the operation. The question hangs upon the diagnosis of the condition, and he expressed regret that no more definite signs are available. No one doubts the advisability of operation, but not everyone can make the early diagnosis. He congratulated Dr. Vaughan upon his results.

Dr. Vaughan, in closing the discussion, said that he desired to thank all the speakers for their remarks and their interest in the paper. The criticisms of his plea for the surgical treatment of intestinal hemorrhage reminded him of a remark of Prof. Billroth: "that the surgeon who touched the human heart would lose the respect of his confrères." The human heart has been operated on nearly 100 times with nearly 40 per cent. of recoveries. Was Dr. Vaughan then so far in advance of his time? He believed that he was late rather than early in advocating surgical intervention in the hemorrhage of typhoid fever because many who might have been saved have perished. The day is coming when operation will be more frequently done. His suggestion of enterectomy in typhoid was purely tentative; but he suggested it upon the same principle upon which we now excise tuberculosis and cancerous glands, and it did not seem to him unreasonble.

But in hemorrhage, his experience had taught him that it need not be very difficult to find the source of the bleeding; that only a few of the Peyer's patches are badly inflamed. These might all be excised if necessary, with the same hope for recovery that we have when a dozen or more bullet wounds of the intestines are closed, sometimes under much less favorable circumstances.

CASE OF CONTRACTED GALLBLADDER; REMOVED BY OPERATION.*

By WM. A. JACK, Jr., M. D.,

Washington, D. C.

A white woman, age 27. Her father died of nephritis; mother, one sister and three brothers alive and well; none dead. The patient had the usual diseases of childhood, including scarlet fever. About ten years ago she had her first attack of severe pain in her right side below the ribs, radiating toward the middle line and right shoulder. These attacks occurred about four times yearly, requiring large doses of morphine.

She was first seen in an attack two years ago; again about eleven months ago. May 1, 1905, she had a severe attack of colic requiring two doses of morphine, one-half grain each. May 17, another attack of same severity. A diagnosis of gall stones was made and she was referred to Dr. Jack for operation. She entered Sibley Hospital, May 19, and was operated on the following morning.

Operation.—A 3½-inch incision was made through the outer border of the right rectus muscle. The gallbladder was located and a stone found at the junction of the cystic and hepatic ducts. The stone was pushed back into the cystic duct, and after careful palpation of the common duct the gallbladder and part of the cystic duct were excised, the cystic duct being doubly clamped and then cut between, the stump disinfected with 95 per cent. carbolic acid followed by alcohol, ligated with chromicized catgut and dropped; the mesentery was clamped and sutured, abdomen closed with layer sutures of catgut. The convalescence was smooth and uneventful, the wound healing by first intention, as shown by accompanying photograph taken May 28, by Dr. Balloch.

Dr. Balloch said that the most important point to be decided in gallbladder surgery is whether to excise the viscus or to drain. In the case of contracted, atrophied gallbladders, such as Dr. Jack had exhibited, cholecystectomy is distinctly indicated, as the function of the part is lost in any event.

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* Reported, with specimen, to the Medical Society, February 14, 1906.

ENDOTHELIAL SPINDLE-CELLED SARCOMA OF THE DURA MATER, PENETRATING THE BRAIN.*

By I. W. BLACKBURN, M. D., Pathologist; with Clinical History by W. H. HOUGH, M. D., Junior Assistant Physician, Government Hospital for the Insane.

(Abstract.)

The case of intracranial tumor presented was one of unusual interest, the growth being of large size, and the degree of invasion of the brain and the displacement and destruction of important structures being extensive. The tumor originated from the dura just in advance of the sella turcica, where it was accompanied by some elevation and roughening of the subjacent bone, and had grown upward, penetrating the base, especially of the right frontal lobe. It had destroyed both olfactory tracts, the optic nerves, and had elongated and thinned the chiasma; and the anterior cerebral arteries were greatly stretched, attenuated, displaced upward and outward, and lay imbedded in the surface of the tumor.

Enucleation of the growth from the brain showed that no organic connection existed between the tumor and the brain other than slight incorporation of the capsule with the leptomeninges, and the pia and its vessels had simply been thrust in advance of the growth and were still recognizable at the bottom of the cavity in the brain. The writer claims that a large percentage of intracranial growths are of this class, and that, owing to their origin and mode of growth, and to the fact that they do not infiltrate the brain substance locally, they are the most favorable for surgical treatment of all tumors affecting the brain.

These growths are mainly composed of spindle cells, frequently arranged in whorls or cell-spherules as well as longitudinally-grouped bands, and the cell-masses are apt to undergo hyaline and calcareous changes giving rise to tumors which have been called psammomata. Some growths of the class present a marked tendency to alveolar arrangement and some preserve to a great degree the endothelial character of the cells. They are believed

*Read before the Medical Society, Jan. 31, 1906. To be published in the *New York Medical Journal.*

to be derived from the endothelium of the dura and possibly of the soft membranes, and though presenting marked peculiarities of growth and absence of ordinary evidences of malignancy, they may be classed with the mesoblastic tumors of the sarcomatous type, and are by some pathologists regarded simply as spindle-celled sarcomata.

The tumor presented weighed 140 grams, or about 5 ounces avoirdupois ; it was nearly globular in shape and in general diameter measured 8 c.m. It was one of the largest studied by the writer, in a series of twenty, but its weight has been exceeded by similar tumors removed by surgical operation. In this case surgical operation could not have been successful owing to the situation of the tumor rather than its large size.

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The microscope shows the tumor to be composed of delicate spindle cells arranged in whorls and bands with some slight alveolar structure. The cell-masses had not degenerated, and the tumor was moderately vascular, the vessels having in some instances fibrous walls and in other cases forming mere channels among the cells.

The clinical history shows that the patient, a colored woman aged 36, was extremely demented, markedly somnolent, and totally blind. She had no paralyses nor speech disturbances, and though she had some headache, slight vomiting and epileptiform convulsions at times, the symptoms were not regarded as distinctive of brain tumor.

The dementia was accounted for by the invasion and pressure of the growth upon the frontal lobes ; the blindness by the destruction of the optic nerves. Absence of speech disturbance and paralyses were correlated with the situation of the tumor on the right side and in advance of the motor region of the brain. The sense of smell was of course abolished, though it could not be tested on account of the extreme dementia of the patient.

Dr. D. S. Lamb said that Dr. Blackburn was peculiarly fortunate in having opportunity to secure so many specimens of tumors of the dura. Dr. Lamb himself had not secured one, which seemed to point to the infrequency of such tumors in the work of the ordinary practitioner ; about the only place to see them was in such an institution as the Government Hospital for the Insane. In the Army Medical Museum were very few specimens of tumors of the dura. One was a carcinoma, so diagnosed by

Dr. Gray. Another, a scirrhous cancer, contributed by Dr. W. P. Carr who, however, had never furnished a history; the tumor is probably secondary, because primary carcinoma of the dura was almost unknown. There were three fibromas, one of which was first diagnosed as a sarcoma, but on rëexamination by Dr. Gray some years afterward, it was pronounced a fibroma. Another fibroma was contributed by Dr. H. A. Robbins, a cavernous fibroma according to Dr. Gray, in an infant 8 months old. The third case of fibroma was from Dr. Hickling, was presented to this Society and was published in the ANNALS, 1904, p. 337.

One specimen, at first diagnosed as sarcoma, was some years afterward rëexamined by Dr. Gray, who was unable to make out any definite structure, so that the case is doubtful. It was a coroner's case; Dr. Hartigan made the *post mortem*; the man was found dead in bed, lying prone, with his arms flexed, his hands clenched, and an expression of agony on his face. There was a history of epilepsy, and presumably he was asphyxiated during an epileptic attack. The tumor was an irregularly lobulated thickening of the dura about 1.5 inch long, and was lying against the frontal lobe.

Apparently the only certain specimen of sarcoma of the dura in the Museum was one received many years ago, a tumor composed of small spindle cells. It was oval in shape, two inches in long diameter, and was situated on the left side, beneath the tentorium, attached to the internal auditory meatus, and had hollowed out a cavity in the cerebellum; it had a thin connective tissue capsule. There was no history beyond the statement that the man had brain symptoms, but what they were was not stated.

Dr. W. H. Hough said that his only comment upon the case was that during the year and a half the patient was an inmate of the Asylum, no adequate history of the inception of the disease could be obtained. During hospital observation her symptoms were not distinctive; the mental symptoms were most marked, and were those of profound dementia which masked the earlier symptoms of cerebral tumor.

Dr. Randolph said that he had seen a specimen of dural endothelioma in his pathological work in Philadelphia. The patient came to the surgical clinic and was referred for operation. The growth was removed; but the patient promptly died. This tumor took origin from the dura in the parietal region; it did not invade the brain, but the bone was considerably involved.

Under the circumstances, no discredit should attach to anyone for failure to make an exact diagnosis in the case reported. If the patient could have been seen earlier, and if the ocular fields could have been studied regularly, at least a tentative diagnosis could have been made.

Another case of apparent cerebral tumor in his experience presented evidence of progressive optic atrophy; progressive hemi-

anopsia. The growth was evidently in the region of the optic tract, and Dr. Keen made an experiment on the cadaver to determine the feasibility of reaching that region. The patient died with symptoms of apoplexy. The tumor proved to be an aneurysm, death being due to its rupture.

Dr. Reyburn said that the question of surgical interference comes up for consideration in the discussion of cerebral tumors. He remembered particularly two such cases that he had seen oprated upon in London by Mr. Victor Horsley. One patient had epileptiform convulsions due to a dural tumor. Excision of the tumor wrought a complete cure. The second case was one of intracerebral neoplasm, and although considerable difficulty was encountered in locating it, the tumor was successfully extirpated and the patient recovered. Thus far the results in cerebral surgery have been somewhat disappointing in general, but progress is being made and hope may be entertained from surgical intervention in cases which in other days were considered entirely hopeless.

Dr. Nichols said that he had made an autopsy upon a case in which the diagnosis of cerebellar tumor had been very cleverly made by the physician in whose care the patient had been. Dr. Nichols discovered a round, nodular, circumscribed, encapsulated tumor arising from the meninges of the cerebellum. Under the microscope it appeared to be a spindle-celled sarcoma; but the clinical circumstances seemed to negative that diagnosis. Since then Dr. Blackburn's work has shown that while these tumors have the histologic characters of malignant neoplasms, they are localized, encapsulated, give rise to no general metastasis, produce no cachexia, and therefore are really benign.

Dr. Blackburn, in closing the discussion, desired to thank all the speakers for their generous remarks. He apologised for giving the name, endothelial spindle-celled sarcoma, to the specimen, but none other adequately designates this variety. As Dr. Nichols had well put it, they have the appearance of malignancy, but no malignant infiltration. As in the case cited by Dr. Randolph, however, he could see no reason why bone might not be infiltrated without such infiltration being malignant. The bone becomes spongy from pressure and the tumor naturally grows into the interstices.

PROTOZOAL HUMAN PARASITES.

By C. W. STILES, Ph. D., Hygienic Laboratory,
U. S. P. H. and M. H. S.

Abstract of a paper read before the Medical Society, Jan. 31, 1906.

[Dr. Stiles stated that three of the most important discoveries in the protozoa in their relation to disease were the recognition of *Trypanosoma gambiense* in connection with sleeping sickness in Africa, *Treponema pallidum* in connection with syphilis, and *Leishmania donavani* in cases of kala-azar in India. He gave a microscopic demonstration of the parasites of sleeping sickness and of syphilis, explaining their structure. In connection with sleeping sickness of Africa he gave a short account of the symptoms of the different stages of the disease.]

Dr. Stiles said that in recent years much important and fruitful research had been carried forward in the study of the etiologic place held by protozoa in the diseases of man. Three noteworthy announcements had recently been made.

First, from India comes the report that a protozoon has been discovered in the spleens of victims of Kala-azar, or Dum-dum fever, which bears characteristics that make its specificity probable.

Second, it has been proven that the sleeping sickness of Africa is caused by a protozoon in the blood, the trypanosoma gambiense. Morphologically, it is elongate, fusiform, somewhat spiral, and is furnished with an undulating enveloping membrane and a tail-like appendage. He had recently received from Africa some of these parasites; the specimen exhibited had been grown in the rat. There is a disease of horses in Africa which is caused by the trypanosoma of sleeping sickness.

Third, a most important announcement is that of the discovery of the probable protozoon of syphilis. Twenty-four different organisms have been described from time to time; one, the *synorictes lues*, attracted considerable attention. The Imperial Health Office of Germany undertook the study of synorictes; although the investigators failed to find this organism, in the search they stumbled upon the parasite which will probably be proven specific. It is a protozoon much like the parasite of sleep-

ing sickness and related to it. It is to be classified with the spirochaeta, distinct from bacteria. The best known of this family is the *spirochaeta Obermeieri* which has an undulating enveloping membrane, but has no terminal flagellum. The syphilis protozoon, treponema pallidum, differs from the spirochaeta Obermeieri in the absence of the undulating membrane and the presence of a terminal flagellum. It is a simple spiral. Great difficulty has been experienced in staining the treponema; recently however Goldhorn, of New York, has prepared a stain which may be used with great simplicity. The stain is an alcoholic polychrome methylen blue. A smear is made from a syphilitic lesion and is air-dried, never dried over the flame. The staining fluid is poured on, allowed to remain from 15 to 35 seconds, is poured back into the bottle (as it may be used over and over again), and the slide is washed by placing it film side down in water. This completes the process. The slide must not be laid flat to dry, but should be tilted on end with the film side on the under slant.

Dr. Kober asked if any attempt had been made to cultivate the protozoon of syphilis. He was aware that the trypanosoma had been successfully cultivated at Ann Arbor, and he desired to know if the methods used for that purpose could be extended to the cultivation of the treponema.

Dr. A. F. A. King desired to know if there were any more conclusive reasons for supposing that the parasite exhibited by Dr. Stiles is specific of syphilis rather than any of the other 24 organisms described.

Dr. Nichols said that the discovery of the parasite was first published last May; already there are above 100 reports to be found in the literature, and the other organisms that have been advanced as causative of syphilis have received nothing like the same recognition. Its specificity seems very probable, but much work remains to be done before its causative relationship with syphilis is absolutely demonstrated.

The treponema may be found quite uniformly in primary and secondary lesions, but not in the tertiary lesions nor in any other diseases. It has been found in primary inoculated sores in monkeys, and in the liver and other viscera of infants dead of congenital syphilis.

Some similar but benign spirochaeta may normally be found in the mouth and about the prepuce, which must be carefully distinguished from the pallidum.

Dr. Stiles, in closing the discussion, said that the most important point of probability in the specificity of the treponema is the

frequency with which it has been found in pure culture in syphilitic lesions. Care must be taken to distinguish between three similar organisms: Spirochaeta refringans, spirochaeta buccalis, and treponema pallidum. Cultivation of the syphilis parasite has thus far been unsuccessful.

The artificial growth of the trypanosomes has been a great triumph on the part of Novi; and it is of great practical importance, as the method may be employed for diagnostic purposes by blood cultures. This artificial cultivation of trypanosomes has been one of the greatest advances America has made in the study of protozoa.

Another great work to which he desired to direct attention and which has not been given due credit, is McCallum's observations on the sexual life cycle of blood parasites, particularly malarial organisms. Not half a dozen Americans and only one foreigner have given McCallum this credit.

OBITUARIES.

Charles Wesley Keyes.

Whereas, Dr. Charles Wesley Keyes, a member of the Medical Society, District of Columbia, died December 19, 1905, therefore

Resolved, That the Society expresses its regret at the loss of our worthy fellow member, and extends its sympathy to his bereaved family.

Dr. Keyes was born March 17, 1854, at Claremont, N. H.; was, while yet an infant, taken by his parents to Vermont, where he spent his youth. Afterwards for some years he was engaged in newspaper work at Farmington, Mass. He left Farmington and came to Washington in 1881 to take a position in the Pension Office. He attended the Medical Department of the Howard University and graduated in 1890. He also studied law. About 1895 he resigned his place in the Pension Office and devoted himself afterwards to the practice of medicine. About 22 years since he married Miss Kate Tomlinson of this city. He was suddenly taken sick in December, 1905, with cerebral apoplexy, rapidly became unconscious, and died December 19th. He left a widow

and one child, a son. He was a member of McKendree M. E. Church and of Federal Lodge of Masons.

Signed, ROBT. REYBURN,
D. S. LAMB,
COLLINS MARSHALL,
Committee.

Washington, January 10, 1906.

DR. ABBIE CUTLER TYLER,

WHEREAS, It has pleased an All-Wise Providence to take from our midst Dr. Abbie Cutler Tyler, for many years a member of this Society, and who died at Warren, Mass., January 6, 1906:

Resolved, That the Society expresses its regret at the loss of a member faithful and earnest in the performance of duties for which she had been so well prepared;

Resolved, That the Secretary is directed to forward a copy of these resolutions to her family.

Dr. Tyler was born at Warren, Mass., in 1836; was educated at Quaboag Seminary, Warren, and at the Green Mountain Institute, Woodstock, Vt., and began to teach at 14 years of age. She graduated in medicine at the New England Woman's Medical College, Boston, in 1868, and spent the next year in post-graduate work in the hospitals of New York City. She began the practice of her profession at Waukegan, Ill., in 1870. After practising for some years, she went to Europe for further study, and spent more than a year in the hospitals and clinics of Rome, Paris and London. While in London she took a six-months' special course in lung and throat work under Dr. Morell Mackenzie.

She came to Washington in 1881 and practiced here until September, 1905, when on account of ill health, she went back to Warren, the home of her childhood, where she died. For several years she was a clinician at the Woman's Clinic, this city.

It may be said of Dr. Tyler that she probably did more than her share of professional work without compensation other than the satisfaction of her conscience and the gratitude of her patients.

Signed, ISABEL HASLUP LAMB,
M. LOUISE STROBEL,
MARY PARSONS,
Committee.

Washington, D. C., January 24, 1906.

DR. SWAN MOSES BURNETT.

WHEREAS, Death has removed from our midst Dr. Swan M. Burnett, who was ever a kind and thoughtful friend, a polished gentleman, and accomplished and skillful ophthalmologist and otologist, an able, enthusiastic and successful teacher, a lover of and an original contributor to professional as well as general literature, a sympathetic humanitarian, rendering his great experience and skill as gladly to the indigent as to the opulent, and a lover, friend and patron of art; and

WHEREAS, Dr. Burnett was a distinguished and interested member of this Society, therefore

Resolved, That this Society express its sense of the profound loss it has sustained, and of the great sorrow it feels, through the death of Dr. Burnett.

Resolved, Further, that the Secretary of the Society be instructed to embody these resolutions in its permanent records, and that a copy be sent by the Secretary to Dr. Burnett's widow and also to his son. Signed, D. K. SHUTE, *Chairman*,
SAMUEL S. ADAMS,
W. P. CARR.

January 24, 1906.

Swan Moses Burnett was born at New Market, Tenn, March 16, 1847, was educated at Halston Seminary, New Market. Graduated at Bellevue Hospital Medical College in 1870. Began to practice medicine at Knoxville, Tenn. Took a post-graduate course in Europe in 1875–6. Removed to Washingion in 1876. Was professor of Ophthalmology and Otology of Georgetown University from 1879. President of the attending staff of Central Dispensary and Emergency Hospital. Member of the staffs of Children's, Providence and Georgetown University Hospitals ; of consulting staff of Episcopal Eye, Ear and Throat Hospital. Member of Washington Anthropological and Philosophical Societies and Washington Academy of Sciences. Past president of Cosmos Club and the Literary Society of Washington. Author of a treatise on Astigmatism, chapters in text books on diseases of eye and ear, and articles in literary and scientific magazines.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, Monday, January 1, 1906.—Dr. T. N. McLaughlin, President, in the chair; about 126 members present.

It was ordered that the regular weekly meetings of the Society be resumed on Wednesday, Jan. 10.

The 32d annual report of the Treasurer was read, showing the

Receipts in 1905, ...	$3,345.96
Expenditures, ...	1,449.17
Balance on hand, ...	$1,896.79

The President announced the list of essayists for the year as follows:

January, W. P. Carr,	May, R. S. Lamb,
February, H. C. Fowler,	October, N. P. Barnes,
March, E. F. King,	November, H. B. Deale,
April, J. W. Bovée,	December, W. A. Wells.

The following officers were elected for 1906: President, James D. Morgan; Vice-Presidents, Frank Leech and J. R. Wellington; Corresponding Secretary, Thomas C. Smith; Treasurer, C. W. Franzoni; Recording Secretary, H. C. Macatee; Librarian, E. L. Morgan; Board of Censors, Deale, Wall, Hagner, Moran and D. O. Leech. Dr. J. D. Morgan was elected Vice President of the Washington Academy of Sciences, to represent the Society.

Wednesday, January 10.—Dr. Jas. Dudley Morgan, President, in the chair; about 65 members present.

Dr. Robt. Reyburn, chairman of a committee appointed for that purpose, reported resolutions of respect for the late Dr. Chas. W. Keyes. See page 55.

Dr. D. S. Lamb, chairman of Committee on Editing the Transactions, reported that Volume IV, 1905–6, had been published in the usual bi-monthly series of six numbers, with a total of 400 pages. A comparison of the cost of this volume with that of its predecessors showed that the net cost of each had been as follows: The first volume, $756.01; second volume, $740.32; third volume,

$645.82 ; the last volume, 381.89. The committee received during the year $343 from advertisements ; from sale of single copies of the journal, 80 cents ; from subscriptions, $6.00 ; total, $348.80 ; and expended for printing and mailing the journal, $723.07 ; for postage, $7.62 ; total, $730.69 ; making the net cost for the year, $381.89.

The Chair announced the following appointments to serve five years on the Executive Committee : C. W. Richardson, D. K. Shute, Louis Mackall, Jr.; and to serve one year, T. N. McLaughlin, vice J. D. Morgan.

To the Committee on Public Health : Truman Abbe, vice Frank Leech ; Hobart S. Dye, vice J. R. Wellington ; John B. Briggs, vice Wm. M. Sprigg.

To the Committee on Essays, N. P. Barnes, vice D. K. Shute.

To the Committee on Directory of Nurses, T. A. Groover, vice H. L. E. Johnson.

To Library Committee, D. G. Smith, vice F. P. Morgan.

To the Milk Commission, H. H. Donnally, vice J. B. Nichols ; Elmer Sothoron, vice J. H. McCormick.

In other respects the Committees to stand as in 1905.

The Chair was authorized to enlarge the Committee on the History of the Society from 3 to 5, and to announce the appointments at a future date.

Dr. E. M. Hasbrouck presented a specimen of Tubercular Kidney and read the history of the case. Discussed by Drs. Hagner and Vale. See page 10.

Dr. D. S. Lamb presented a specimen of Hypertrophic Cirrhosis of the liver. See page 14.

Dr. T. C. Smith presented a specimen of Tumor arising from the Prepuce of the Clitoris. See page 14.

Dr. S. S. Adams read a report from the Executive Committee recommending : 1. That the Society endorse the efforts of the Commissioners to secure an appropriation for the erection of a hospital for consumptives. 2. That the proper representatives of the Society join the Association of State Medical Journals, on behalf of the WASHINGTON MEDICAL ANNALS Adopted.

Dr. A. F. A. King read the essay for the evening. Subject : "An attempt to explain the peritoneal adhesions that so frequently precede typhlitis and appendicitis." Discussed by Drs. J.

Ford Thompson, Chappell, Kober, Reyburn, I. S. Stone and E. C. Prentiss. See page 1.

Wednesday, January 17.—Dr. Morgan, President, in the chair; about 105 members present.

The Chair appointed as the Committee on the History of the Society: Drs. A. F. A. King, Chairman; D. S. Lamb, C. W. Franzoni, G. Wythe Cook and R. T. Holden.

The resignation of Dr. C. L. G. Anderson was accepted.

A report of the Executive Committee recommending that the Society hereafter meet at the Columbian University Hall, 15th and H streets, northwest, was adopted; also a recommendation from the same committee, relative to preliminary steps, toward preventing pollution of inter-state streams.

Dr. D. K. Shute exhibited, with remarks, a model, for a new *ophthalmotrope*. Discussed by Drs. Motter and W. G. Suter. See page 16.

Dr. Hasbrouck reported a case and presented a specimen of *renal calculus*. See page 21.

Dr. Hagner reported a case and presented a specimen of *ureteral calculus*.

The two cases of calculus were discussed together. Discussed by Drs. Bovée, H. A. Fowler, Carr, Merrill and Groover.

Dr. Loren Johnson reported a case of *one-day pneumonia*. Discussed by Drs. Claytor, Wood, Chappell, Acker, J. D. Thomas and Louise Tayler-Jones. See page 27.

Wednesday, January 24.—Dr. Morgan, President, in the chair; about 60 members present.

Dr. Shute, for the committee on the death of Dr. Swan M. Burnett, reported resolutions, which were adopted. See page 57.

Dr. Isabel Haslup Lamb, chairman of the committee appointed for the purpose, reported resolutions of respect for the late Dr. Abbie C. Tyler, which were adopted. See page 56.

Dr. W. P. Carr presented a patient, the inferior lobe of whose right lung had been removed.

Dr. Vaughan read a paper entitled: "The surgical treatment of typhoid perforation and hemorrhage." Discussed by Drs. W. P. Carr, S. S. Adams, Chappell, J. P. Miller, Jos. Taber Johnson,

Hagner, J. Ford Thompson, I. S. Stone, Reyburn, Fremont-Smith and J. D. Thomas. See page 31.

Wednesday, January 31.—Dr. Morgan, President, in the chair; about 70 members present.

Dr. Kober stated in brief the findings of the committee appointed to investigate the efficiency of the city water filtration plant, and the recommendations of the committee were adopted.

Dr. I. W. Blackburn reported a case of *Endothelial spindle-celled sarcoma* of the *dura mater* penetrating the brain, with the clinical history by Dr. W. H. Hough; and showed the specimen with photographs. Discussed by Drs. D. S. Lamb, R. S. Lamb, Hough, Randolph, Reyburn and Nichols. See abstract, page 49.

Dr. C. W. Stiles gave a microscopic demonstration of the *protozoa of syphilis* and of the *sleeping sickness*. Discussed by Drs. Kober, A. F. A. King and Nichols. See abstract, page 53.

Wednesday, February 7.—Dr. Morgan, President in the chair; about 80 members present.

The Corresponding Secretary read a letter from the widow of Dr. Burnett expressing her appreciation of the resolutions adopted by the Society; letters of appreciation from *Collier's Weekly* and the *Ladies' Home Journal* for the resolutions commending their work in exposing the nostrum evil; and a letter from the Commissioners acknowledging the request of the Society to call together certain persons to consider means to prevent the pollution of inter-state streams, and promising action in the matter.

Dr. A. F. A. King, Chairman of the Committee on the History of the Society, read a tentative report, outlining the proposed scope of the history. See page 63.

The report was adopted and authority given to print it as a circular. The Committee was also authorized to prepare and publish the history and to draw on the Treasurer for funds to defray necessary expenses.

Dr. Sowers, Chairman, read a report of the Executive Committee, embodying recommendations for the action of the Society upon certain legislation now pending before Congress, and other matters. The report was made the special order for March 7.

Dr. Ruffin reported a case of *septic endocarditis*, with specimen. Discussed by Drs. J. D. Thomas, Claytor, Fremont-Smith and Bishop.

Dr. E. C. Prentiss showed a microscopic section of *appendix vermiformis* with a *double lumen*. See page 25.

Dr. J. P. Miller read a letter from Dr. W. W. Keen in correction of Dr. Miller's remarks on Dr. Vaughan's paper on typhoid perforations. See page 44.

Dr. W. P. Carr read the essay for the evening. Subject: "The Surgical Aspect of Complications and Sequelae of Pneumonia." Discussed by Drs. Vaughan, J. Ford Thompson, R. S. Lamb and Keech.

Dr. L. Eliot read a paper upon the use of *adrenalin chloride* in *Small-pox*. See page 26.

Wednesday, February 14.—Dr. Morgan, President, in the chair; about 55 members present.

Dr. S. S. Adams read a letter from Dr. Chas. F. Stokes, U. S. Navy, to the Medical Society, in which he announced the necessity of his leaving Washington, his regret at severing his connection with the Society, and his deep appreciation of his election and privileges as a Member by Invitation. The Corresponding Secretary was instructed to acknowledge receipt of the letter and to convey to Dr. Stokes the Society's thanks and its regret that the public service demanded his removal from Washington.

Dr. Wm. A. Jack reported a case of *contracted gallbladder* with specimen. Discussed by Dr. Balloch. See page 48.

Dr. R. S. Lamb reported cases as follows: Gonorrhoeal ophthalmia in a child; gonorrhoeal ophthalmia in a woman of 50; optic atrophy; double interstitial keratitis. Discussed by Drs. Hagner, Kober, Wilkinson, Butler, Loren Johnson, Belt, Dufour, McKimmie and Dye.

Dr. T. A. Claytor stated that he had recently talked with Mr. Saml. Hopkins Adams, of *Colliers' Weekly*, who expressed himself as very anixous that medical men should urge the passage in the various States of a bill published in the *Ladies' Home Journal* in regulation of the traffic in nostrums. Dr. Claytor desired to call the attention of the Society to this bill, and to urge upon the members the importance of using every opportunity to further the passage of the bill in the various States.

Dr. B. M. Randolph read the paper for the evening. Subject: "A Review of the Present-day Therapy of Pulmonary Tuberculosis." Discussed by Drs. R. S. Lamb, Hunt, Nichols, Chappell, Kober, Wilkinson and Phillips.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . . "The Cumberland."
WALTER A. WELLS, M. D., ... "The Rochambeau."
MURRAY GALT MOTTER, A. M., M. D., . . 1815 Belmont Avenue.

Editorial.

THE HISTORY OF THE MEDICAL SOCIETY.

The Committee appointed to prepare and publish a History of the Medical Society has mailed to each member of the Society, as well as to many ex-members and families of deceased members, a printed circular, setting forth tentatively the plan of the work adopted, and asking the co-operation of members and others, so that the work may be done as completely and accurately as possible.

The Committee desires to have a personal history of each member, present and past, especially as to the following: The *full* name; date and place of birth (including the month and day and city); year of graduation in medicine and college from which graduated; any other degrees, with year, and institution by which conferred; and if a biographical sketch has been published, a reference to the publication, giving title of publication, date, and page. This much of the personal history will be published; and the fact that the membership of the Society from the beginning, 88 years ago, now numbers over 700, may compel the Committee to limit the space of personal history to that just stated. Should, however, the progress of the work open a way to amplify these histories, the Committee will gladly avail itself of the opportunity to do so. It is therefore suggested, that members whose personal sketches have not thus far been published

anywhere, send such sketches, of not greater length than the ordinary letter page, to the Chairman of the committee, so that they may be used if opportunity offers, and in any event will be matter of record.

With regard to members who have removed or deceased, especially those who have removed or died many years ago, the Committee must look for information to their relatives and friends. By way of suggestion it may be mentioned that Dr. Glazebrook has given information concerning Dr. Thomas Henderson, who was a member of the Society from 1817 to 1854, in which latter year he died.

There may be members who have in their possession papers and documents bearing on the history of the Society or its members, that would be useful to the Committee; the Committee would be glad to have the loan of such papers or documents.

The Committee has begun the collection of photographs, pen portraits, and other pictorial representations of members, and desires to make this collection as complete as possible. Members and others are requested to help this movement. The collection will be arranged and indexed for convenient examination.

DISCUSSIONS OF MEDICAL PAPERS.

Members of the Society who discuss papers and specimens are particularly requested to return *promptly* to the Recording Secretary the typewritten memoranda of their remarks sent to them by him for verification. When these memoranda are not promptly returned they are not received by the Editorial Committee in time for publication.

THE ASSOCIATION OF STATE MEDICAL JOURNALS.

"The objects of this Association," as stated in its Constitution, "are to bring into closer harmony the journals published by State Medical Associations or Societies to the end that their value and usefulness may be increased and their influence extended;

to effect a more intimate community of interests and to improve their business relations."

By vote of the Society, taken January 10, 1906, THE WASHINGTON MEDICAL ANNALS became enrolled on the list of members. Hereafter, so long as this membership is maintained, our advertising pages must be governed by the standards promulgated by the Council on Pharmacy and Chemistry of the American Medical Association. It should be noted, however, that this standard had, practically, been adopted by the Editorial Committee before we received the overtures of the Association of State Medical Journals. This involved the dropping of several advertisements which, for one reason or another, have been thought to be objectionable. As was announced, in an informal report to the Society on behalf of the Editorial Committee, this may also involve some curtailment of our revenue from these sources; a contingency which has, thus far, not been realized.

From the present trend of sentiment on this question, it is quite evident that the "psychologic moment" is fully upon us. The future of the nostrum evil, so far as the organized profession is concerned, should be settled at once and for all time. The recent exposures, and the consequent reform movements, in State and Municipal affairs, in Insurance and in Finance, are indicative of an awakened public conscience. The medical profession has been shown to be not altogether free from the taint of graft. Blocks of stock, rebates and percentages have been offered and, unfortunately, accepted as methods of exploiting certain classes of remedies. The Proprietary Association of America, at first so blatant in its opposition to the movement now going forward under the auspices of the American Medical Association, is evidently beginning to feel the pressure. Now and again we may note in the columns of our current medical journals that this or that firm has withdrawn from the Proprietary Association, and desires the fact to be published.

Much yet remains to be done, however, and much can be done if each and every physician will but constitute himself a missionary among his own patients. It ought not to be difficult to explode the absurd claim that the opposition to self-medication on the part of the layman is the sole outcome of self-interest on the part of the physician. Aside from the obvious futility of a therapy which, of necessity, ignores underlying pathologic con-

ditions—conditions which require for their recognition all the nice skill and training of the diagnostician—there is the greater danger incident to the loss of time, in which the disease processes are being fully established and the natural powers of resistance undermined. Moreover, as, in the stress of present-day strenuosity, "nerves" are more and more in evidence, sedatives, analgaesics and narcotics are more and more sought by the laity, and with them comes the horrible trail of the drug habit. The order of the old therapeutic dictum has become inverted, and we are bid to heal, CITO ET JUCUNDE, *sed deinde tuto.*—M. G. M.

DEFINITION OF THE PRACTICE OF MEDICINE.

One of the greatest difficulties encountered in medical legislation has been to secure a concise, comprehensive, fraud-proof definition of what constitutes the practice of medicine. The problem has been variously essayed, but thus far, seemingly, without satisfactory result. Through the wiles of the charlatan and the tergiversations of the shyster, these definitions have become so expanded and distended that one is reminded of Aesop's fable of the Frog and the Ox, and surely when they have been pricked in the courts they have been found to be made up very largely of—wind.

Perhaps the tersest definition we have seen is to be found in our own "Act to prevent the spread of scarlet fever and diphtheria in the District of Columbia," approved December 20, 1890: "The words 'practitioner of medicine,' or 'practitioner,' shall be held to include all persons who undertake to treat persons afflicted, either gratuitously or for pay." But, why go into details, either as to method or motive? Surely, experience, in the wars of the schools and in the prosecution of quacks, has shown that these are de-tails which have wagged de dogs, and the latter have trotted off contented and undismayed. If our Solons could but be induced to omit practice and therapeutics from the list of subjects demanded in the examination for State licensure, our biped and triped—not to mention the polyped—State Examining Boards will have lost their *raison d'etre.* The common-sensible practitioner of the day, whatever his stripe, seeks results, and will have them, by what means he may.

With the characteristic diffidence of one who rushes in where angels have had hard sledding, we beg to ask: why not say that *the practice of medicine embraces the care and treatment of those who are diseased, deformed or injured, together with the management of childbirth*,—and be done with it? Why has obstetrics been so uniformly ignored in these definitions? Is it in anticipation of the ultimate results of an ever diminishing birth-rate? But this definition should be followed by the statemant that *a practitioner of medicine is one who is legally authorized to offer his services to the public and to assume the responsibility of the care and treatment of those who are diseased, deformed or injured, and of the management of childbirth.* This, we opine, should "let out" the nurses, whether domestic or professional, and the counter-prescribing druggist who administers a pain-killer in emergency; and it should keep out the quack and the —path until they shall have qualified in anatomy, physiology, chemistry, pathology and diagnosis.—M. G. M.

HEALTH DEPARTMENT NOTES.

Dr. William C. Fowler, Chief Inspector and Deputy Health Officer, has been appointed Medical Inspector in charge of the Contagious Diseases Service; Dr. Murray Galt Motter has been appointed Chief Inspector and Deputy Health Officer, vice Dr. Fowler, transferred.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from Dec. 1, 1904, to March 1, 1905, and the same period of 1906.

DIPHTHERIA.

1904 and 1905.			1905 and 1906.		
Cases on hand Dec. 1, 1904..	69		Cases on hand Dec. 1, 1905..	75	
Cases reported from Dec. 1, 1904, to Mar. 1, 1905.....	160		Cases reported from Dec. 1, 1905, to Mar. 1, 1906.....	177	
Cases discharged, recoveries		193	Cases discharged, recoveries		209
Cases discharged, deaths.....		17	Cases discharged, deaths.....		11
* Per cent. of fatal cases.....		8.	* Per cent. of fatal cases.....		5.
Cases on hand Mar. 1, 1905..		19	Cases on hand Mar. 1, 1906..		32
Total cases.....	229	229	Total cases.....	252	252

SCARLET FEVER.

1904 and 1905.			1905 and 1906.		
Cases on hand Dec. 1, 1904...	55		Cases on hand Dec. 1, 1905..	22	
Cases reported from Dec. 1, 1904, to Mar. 1, 1905.....	98		Cases reported from Dec. 1, 1905, to Mar. 1, 1906.....	85	
Cases discharged, recoveries,		124	Cases discharged, recoveries		74
Cases discharged, deaths.....		1	Cases discharged, deaths....		3
* Per cent. of fatal cases.....		.8	* Per cent. of fatal cases.....		3.7
Cases on hand Mar. 1, 1905..		28	Cases on hand Mar. 1, 1906..		30
Total cases.....	153	153	Total cases.....	107	107

TYPHOID FEVER.

1904 and 1905.			1905 and 1906.		
Cases on hand Dec. 1, 1904..	237		Cases on hand Dec. 1, 1905..	142	
Cases reported from Dec. 1, 1904, to Mar. 1, 1905.....	79		Cases reported from Dec. 1, 1905, to Mar. 1, 1906.....	100	
Cases discharged, recoveries,		238	Cases discharged, recoveries		196
Cases discharged, deaths.....		23	Cases discharged, deaths....		17
* Per cent. of fatal cases.....		8.8	* Per cent. of fatal cases.....		7.9
Cases on hand Mar. 1, 1905..		55	Cases on hand Mar. 1, 1906..		29
Total cases.....	316	316	Total cases.....	242	242

SMALLPOX.

1904 and 1905.			1905 and 1906.		
Cases on hand Dec. 1, 1904..	1		Cases on hand Dec. 1, 1905..	4	
Cases reported from Dec. 1, 1904, to Mar. 1, 1905.....	4		Cases reported from Dec. 1, 1905, to Mar. 1, 1906.....	53	
Cases discharged, recoveries,		4	Cases discharged, recoveries		32
Cases discharged, deaths.....		1	Cases discharged, deaths.....		4
* Per cent. of fatal cases.....		20.	* Per cent. of fatal cases.....		11.1
Cases on hand Mar. 1, 1905..		5	Cases on hand Mar. 1, 1906..		21
Total cases.....	5	5	Total cases.....	57	57

* The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD.

A Comparison of the Weekly Reports issued by the Health Department, D.C. during the months of January, 1906, and February, 1906, with corresponding period of 1905.

DEATHS, TOTAL NUMBER, SHOWING NUMBER BY RACE ALSO.

Week ending.	White	Colored.	Total.	Week ending.	White.	Colored.	Total.
	1905.				1906.		
January—							
7	72	51	123	6	71	64	135
14	78	43	121	13	77	57	134
21	80	58	138	20	67	51	118
28	82	47	129	27	81	53	134
Total,	312	199	511		296	225	521
February—							
4	68	57	125	3	65	51	116
11	93	64	157	10	69	49	118
18	75	55	130	17	72	63	135
25	78	61	139	24	64	63	127
Total,	314	237	551		270	226	496

DEATHS CLASSIFIED BY AGE OF DECEASED.

	Under 1 year.	1-4	5-59	60 and over.	Under 1 year.	1-4	5-59	60 and over.
	1905.				1906.			
January—								
Total, 64	30	273	144		79	33	239	170
February—								
Total, 87	46	236	182		77	33	240	146

COMPARISON OF FOUR OF THE PRINCIPAL CAUSES OF DEATHS.

	January,		February,	
	1905.	1906.	1905.	1906.
Consumption	81	69	81	75
Pneumonia	78	76	92	61
Kidney Disease	44	33	38	43
Heart Disease	61	58	40	42

Table showing a Comparison of Deaths resulting from Diseases of the Respiratory System during the months of January and February, 1906, with those that occurred during corresponding period of 1905.

January, 1905.	Deaths.	January, 1906.	Deaths.
Week ending January 7	29	Week ending January 6	37
14	19	13	21
21	28	20	22
28	30	27	20
Total	106	Total	100
February, 1905.		February, 1906.	
Week ending February 4	30	Week ending February 3	18
11	25	10	14
18	27	17	16
25	39	24	20
Total	121	Total	68

Comparison of number of Births reported to the Health Department, D. C., during the months of January and February, 1906, with the corresponding period of 1905.

BIRTHS, TOTAL NUMBER, SHOWING NUMBER BY RACE ALSO.

Week ending.	White.	Colored.	Total.	Week ending	White.	Colored.	Total.
January—	1905.				1906.		
7	80	36	116	6	73	45	118
14	74	35	109	13	96	51	147
21	48	42	90	20	104	45	149
28	56	48	104	27	81	43	124
Total,	258	161	419		354	184	538
February—							
4	67	54	121	3	86	37	123
11	65	48	113	10	95	48	143
18	99	35	134	17	68	47	115
25	128	37	165	24	59	45	104
Total,	359	174	533		308	177	485

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A REVIEW OF THE PRESENT DAY THERAPY OF PULMONARY TUBERCULOSIS.*

By B. M. RANDOLPH, M. D.,

Washington, D. C.

If the presentation for your consideration of a subject so well worn as pulmonary tuberculosis requires any apology, sufficient excuse is found in the importance of a disease which plays such an appalling part in producing the death rate and invalid list of all civilized communities. Indeed, the very profusion of literature and discussion on the subject tends to confuse and bewilder us, and makes it the more necessary from time to time to thresh the subject over, and try to separate that which is of practical value from that which is merely speculative, or of undemonstrated benefit. It is with a view of reviewing the methods employed in curing consumption, and drawing out a discussion as to their relative merits, that this paper is presented to you this evening.

To rehearse all the remedies which have been employed to cure this disease would be to delve into history in a fashion not contemplated in the scope of this paper. I propose to discuss only those measures which are today recognized as having beneficial effect on the disease. I may say at the start that the present view is that no remedy now known has any specific action in either destroying or inhibiting the tubercle bacillus in the body, or in acting as an antidote to its toxins. We recognize the fact that while our remedies do relieve the symptoms, arrest the progress of the disease, and, in many cases, result in permanent cure, they do so only by aiding the inherent resisting power of the body through the development of an improved nutrition.

I think there are many who do not believe that pulmonary tuberculosis is ever truly cured. The statement that consumption

*Read before the Medical Society, February 14, 1906.

is curable is the watchword of all organizations engaged in the antitubercular crusade, and some of us think this statement is unjustified. This skepticism brings us face to face with the definition of what constitutes a cure. We must remember that the same word may have a different meaning to different persons. *Intoxication* means to the scientist *poisoning*; to the lawyer and layman, *drunkenness*. The word tuberculosis itself means to the physician infection with the tubercle bacillus, and the wide range of pathological changes produced by the development of that organism in animal tissue; to the average layman it means cough, fever, pain, sleeplessness, wasting away, and a gradual but inevitable descent into the valley of death. A *cure* means to the ordinary citizen the cessation of the manifestations of disease and the restoration to a sustained condition of health. With this understanding of the word we *are* justified in proclaiming to the laity that consumption is curable. The physician's idea of a cure is the result obtained when the patient is relieved from all manifestations of the disease, subjective and objective, and is free from any process, condition or infection which of itself tends to reproduce that disease at a period more or less remote. In other words, he is cured when he is restored to health, and is justified in expectation of remaining in health, provided he is not again exposed to the primary etiological factors of the disease.

We cannot apply this test rigidly to tuberculosis, because we are ignorant of several steps in the pathological process. We do not know the length of time between the advent of the bacillus and the development of tubercle; nor the whereabouts of the bacillus during that time; nor how long it may remain latent in the body; nor what physical or chemical changes convert tissue which has hitherto resisted its development into a fertile soil; nor whether this change is brought about by a temporary suspension of nature's resisting forces, or otherwise. We do know that metastatic tubercular foci of great severity may develop from a lesion so mild as to produce no symptoms; and yet we find at autopsy hundreds of cases of healed tuberculosis in patients who have never given the slightest evidence of the disease. The process of healing is the same as in all focal lesions of connective tissue. The focus is surrounded by a zone of newly formed connective tissue cells, which, as soon as the destructive or irritative stage is arrested, become converted into dense

fibrous or cicatricial tissue. No case can be spoken of as cured, unless all the foci of the disease are obliterated by such a development of fibrous tissue. The determination, then, of a permanent cure depends on whether the bacilli thus encapsulated can ever regain access to normal tissue, and become producers of fresh tubercular foci. Personally, I do not believe it is possible. A cured case may be reinfected from without, but not from the bacilli entombed within dense scar tissue. Though I do not go to the extent of believing that every man is somewhat tubercular, I do believe that most persons who live any length of time in our modern cities have tubercle bacilli in their bodies at some time or other. I consider the man who is anatomically cured, as above described, has as much right to call himself free from this disease as those who harbor the organisms but have not developed the disease.

While on the subject of terms, I may mention two words the use of which in this connection tends to convey a false impression to the lay mind. To speak of tuberculosis as *contagious* causes the uninformed to class it with smallpox, scarlet fever and measles, and is calculated to produce feeling against patients suffering with consumption, which is both unreasonable and injust. The laity should be made to understand that the one source of the disease is the sputum of infected patients, but that the disease cannot be transmitted if this sputum is disinfected, or destroyed at its source. The other word to which I refer is *heredity*. Though there is reason to believe that an infant may come into the world infected with tubercle bacilli, such an occurrence is so rare as to have no significance in the etiology of tuberculosis. It can hardly be doubted that some persons have tissues which furnish a specially apt soil for the bacilli to grow in, and that this susceptibility may be transmitted from parent to child. Such a person, however, provided he is not infected from without, is as safe as the most robust. I believe that discussion on heredity serves only to bewilder the laity, and to divert their attention from the question of prime importance in the propagation of tuberculosis, and that is infected sputum.

It has been amply demonstrated that the essential remedies in curing consumption are: 1 Rest; 2 Pure Air; 3 Food. There is a tendency today, in the enthusiasm over the wonderful results derived from these three agents, and because of the injurious ef-

fects of drugs injudiciously employed, or used with an improper conception of the purpose to be accomplished by them, to deny the latter a place in the treatment of consumption. I am of the opinion that every case presents, at some time in its course, important phases, which are successfully met by the intelligent exhibition of drugs, and that without deleterious effect on the patient, either immediate or remote. I believe the beneficial effects obtained by the aforesaid agents are both facilitated and enhanced by the proper use of medicine, and have no hesitation in claiming a fourth place for drugs in the treatment of this disease.

1. *Rest.*—This is a relative term which may be applied to anything between the normal activity of the healthy body and profound dreamless sleep. What may constitute comparative rest for one person may be abnormal physical exertion in another. We must, therefore, in deciding to what extent rest must be insisted on, consider not only the stage and activity of the tubercular process, but also the individual's occupation and habits, as well as complicating disease.

In all destructive lesions, and especially in those accompanied by the absorption of toxins, it is a well established principle that regeneration and repair are best accomplished when the part is at rest. Nature has supplied us with an inducement to submit to this treatment by making pain a predominant symptom of inflammation or injury of any part where motion is the result of voluntary muscular action. The prompt formation of pleural and peritoneal adhesions has the same purpose. So long as the resisting power of the body is insufficient to counteract the amount of toxins being formed, the disease is in a progressive state, and the newly formed connective tissue cells are successively attacked and undergo necrosis. The toxic products are absorbed into the general circulation, and produce the fever, the accelerated respiration, and the rapid, irritable heart action characteristic of this stage. If at this time excessive physical exertion is indulged in, the already overtaxed respiratory and circulatory systems have additional work thrown upon them, the tissues in the neighborhood of the lesion become congested, and the work they are trying to do is interfered with. At the same time, the oxidizing function of the blood, already engaged to its utmost, has thrown upon it the waste of increased muscular metabolism. It follows

then that rest during the stage of progression, which stage is indicated by the temperature, the respiration and the heart action, is essential. When the disease process permits it, exercise may and should be begun, and gradually increased as the patient is able to endure it without hurt; for exercise in disease, as in health, increases the strength, improves the appetite, promotes oxidation and helps elimination. The patient should have the benefit of these factors, when he can do so without disadvantage to himself. It is here that the continuous control and watchfulness maintained in sanatoria exercise the greatest benefit. A conscientious and intelligent patient may, when impressed with the importance of pure air and abundant wholesome food, be trusted to carry out instructions in these matters; but no man can be the proper judge of the everchanging status of his disease, which is the index of how much or how little rest he must take. It is remarkable how prevalent the idea is that if a certain thing does you good, more of it will do you more good. I am convinced that there is no cause responsible for so many backsets as the failure to understand and meet the indications for rest.

2. *Pure Air.*—Air is breathed into the lungs to furnish the tissues with the oxygen necessary for the chemical reactions constituting the phenomena of cell life. If this were the only point of view from which the air surrounding the consumptive patient had to be considered, it would follow that any air containing a normal percentage of oxygen, and free from all substances which are irritating to the respiratory tract, or injurious to the human organism would be equally good. This view is maintained by some. But we have to consider also the effect of air as a bathing fluid, and hence the modifying effects produced by various atmospheric conditions on the cutaneous nerve endings, and through them on the central nervous system and the circulation.

The skin, with its numerous nerve endings and abundant capillary circulation, has very important functions connected with body metabolism. It is an organ of sense, an organ of excretion and an organ of heat regulation. These functions are intimately dependent on one another. The nerves governing the sense of temperature, by the control of the cutaneous capillary circulation, govern the conservation and loss of heat, and, by altering the relation between the external and internal blood supply, exercise a profound influence on the entire circulation, and hence on body

nutrition. The eliminative function of the skin, the importance and extent of which are too little realized, is absolutely controlled by the cutaneous capillary system, that is, through the agency of the sensory nerves. Winternitz, Baruch, and other advocates of hydrotherapy have amply demonstrated the remarkable effects produced on this cutaneous capillary system by the intelligent application of water under varying conditions of duration, temperature, mechanical force and evaporation. When we bathe the body in air, the variations in temperature, humidity and pressure must affect the functions of the skin in the same manner, though of course in a more feeble fashion, than is the case with the less volatile fluid water. If we add to these considerations the chemical action of sunlight, the psychic effect of a change of scene, the stimulating effect on the respiratory apparatus, and the unquestioned though unexplained increase in haemoglobin and red cells produced by removal to higher altitudes, we must admit that climate may a least play the part of an adjuvant in the prescription for the tuberculous patient.

Undoubtedly many very diverse climates seem to have a very pronounced beneficial effect on the disease. The Adirondacks, New Mexico, Arizona, Colorado, Southern California, Western North Carolina, Northern Africa, San Moritz, the Riviera, and the German mountains all seem admirably suited, and yet present an astonishing variety of climate. It seems to me that the end to be sought in the choice of climate is the same as in the case of hydrotherapeutic measures, that is *reaction*. Whether we use the warm, cold, part or full bath pack, drip sheet or douche ; whether we are treating febrile conditions, cardiac disease, nervous disorders, or anaemia, the end always sought, and without which the treatment is a failure, is the proper reaction of the circulation to the measure employed. In like manner, when the consumptive is exposed to fresh air, if the changes brought about are promptly followed by a response on the part of the vessels resulting in the establishment of a normal healthy balance between the cardiac and peripheral circulation the result will be satisfactory. But if the cutaneous capillary circulation, after being stimulated to primary contraction by cold, remains in such a state by contraction ; or if the enervating effect of too warm and moist air produces a continued relaxation of this system, thus interfering with the proper movement of the blood through

the capillaries, and hence through the veins, heart, lungs and arteries, the result is not a success.

The factor of climate then resolves itself into a question of reaction. Any climate will be suitable where this reaction can be insured, when the patient is continuously in the open air. The selection of a climate is based entirely on consideration of the individual case. We must weigh the patient's age, his habitual surroundings, his occupation, and complicating disease. It is well known that persons with organic heart lesions do badly in very high altitudes ; that rheumatics are injured by cold damp climates ; that persons with profound anaemia can not stand as rigorous a climate as the plethoric. Persons who have dwelt in a warm enervating climate must not have too sudden a change to a severe one, and *vice versa*. Further, we must consider psychological features. Those with little education and provincial habits are subject to a grave degree of nostalgia, when too greatly removed from their customary surroundings. Many have not the moral stamina to make a business of getting well, and are prone to the temptations of dissipation, or social pleasures. Such will not receive benefit from any climate, unless subjected to efficient control. We must also take into consideration the fact that the patient, when his treatment is completed, may have to return to his old habitation. In such cases it is better to select a climate as much as possible like the native one, rather than one where relapses are likely to occur on leaving it. Last, but not least, we must consider the patient's financial condition. He *must not* be sent away from home *at all*, unless he can be maintained in at least as good circumstances as those to which he is accustomed, and that for a sufficient length of time to effect a cure.

3. *Food.*—As we have seen that the chief end to be attained in dealing with consumptives is improved nutrition, it follows that feeding plays a leading part in our treatment. Too much stress has been laid on the idea that we must crowd a patient with as much milk and raw eggs as we can induce him to swallow, irrespective of his power of assimilation and the state of his digestive tract. The principles of diet in consumption are the same as those in any other disease where we wish to improve nutrition, that is, to give only such quantity and quality of foods as can be assimilated, no more, no less. It is true that a large number of patients can, under proper conditions, ingest and digest an as-

tonishing amount of milk and eggs, but this is by no means always the case. In tuberculosis, as in typhoid fever, we find many who can tolerate milk for a short time only, or not at all. The same is true with eggs. Other persons can take them only after careful training of their digestive organs. Others have a positive distaste for one or both these articles, or soon tire of them. Again we find persons in whose diet carbohydrates, fats, or fruits and fresh vegetables have always prevailed, and these take unkindly to the large proteid percentage. Those who have practiced much among the negroes must have been impressed by the early age at which the infant gets away from the exclusive breast and bottle diet, and begins to partake freely of the rank, greasy food of his parents. Efforts to substitute wholesome, nutritious beef for fat hog meat in the diet of this race have met with strong protest. It is a mistake to make these persons take three or four quarts of milk and a dozen or more eggs daily ; and he who does this will generally find that first the appetite rebels, and then symptoms of intestinal toxaemia develop.

The alimentary canal is proverbially prone to disturbances in consumption, and it is our duty to ascertain its condition at every stage, and regulate the food accordingly. A varied diet, nutritious in character, well cooked, and within the digestive capacity of the patient, will give better results than indiscriminate stuffing with milk and eggs. I do not wish to be understood as saying that these articles are not to be recommended in the consumptive's dietary, but only that they should be used intelligently. The stage of the disease, and the patients individual taste, habits and digestive capacity furnish the indications for the quantity and quality of his food.

4. *Drugs.*—Under this head I include all internal and external remedies. As I have said before, our present equipment does not furnish us with any remedy that has a specific effect on the tubercle bacillus, or its toxins. Many things have been exploited as having such effect, but any good result they may have had is by improving general nutrition, and not by any specific action.

Antitoxic sera would seem to promise much. Beginning with Koch's tuberculin, which was exploited over fifteen years ago, continuous efforts have been made to perfect an antitoxin which would be of practical benefit. None of these preparations, what-

ever claims of success have been made by their originators, have stood the test in the hands of unprejudiced observers. McFarland, (*Textbook upon the Pathogenic Bacteria*, Ed. 1904), after referring to the work of Koch, Tizzoni, Centanni, Bernheim, Paquin, Maragliano and others, has this to say :—"From these discordant observations, the more favorable of which are probably hasty records of inadequate or incomplete experiments, the conclusion that little is to be hoped from immune serums in the treatment of tuberculosis is inevitable."

Marmorek and von Behring hold the lime-light at present in the subject of sera. Von Behring, by virtue of his great work in diphtheria and tetanus, and from his recent results in successfully immunizing cattle against bovine tuberculosis, seems to be entitled to the greater consideration. His proclamation at the International Congress of Tuberculosis in Paris last October has produced a sensation but little less than that with which the announcement of Koch's "lymph" was received. The world has understood him as promising a specific cure for tuberculosis. What he said was :—"My method is destined, I believe, to protect men with phthisis against the consequences of infection." Arnold Klebs, (*Jour. A. M. A., Dec. 16, 1905*), in a careful critical review of von Behring's address, as published in the *Münchener Medicinische Wochenschrift*, concludes as follows :—"How much ultimately suffering mankind is to profit can not be predicted, nor can Behring's expressed, though carefully and ambiguously worded expectations mean anything but a plausible, by him yet unproved hypothesis of a curative principle, applicable in human tuberculosis."

The only drugs that are today generally prescribed simply because the patient has consumption, that is with any idea of specific influence, are cod-liver oil and creosote. Cod-liver oil does undoubtedly help those persons whose digestions can tolerate it, but its benefit is due to the fact that it is an easily assimilated fatty food. It never has done more than improve nutrition, thus indirectly influencing the disease. It did valuable service in this way, while we were awaiting the development of a rational treatment. It is still of great service in selected cases, and seems especially suited to the stomach of the negro.

Creosote is a stimulant expectorant, has a sedative influence on the nerve endings of the gastric mucosa, prevents fermentation

in the stomach, and is an intestinal antiseptic. By its action on the bronchial mucous membrane it directly improves and relieves the cough. By its local action on the stomach and intestinal tract it prevents these dyspeptic, fermentative and irritative conditions which interfere so much with the proper assimilation of food. As a result, digestion is better, the appetite improves, and there is a gain in nutrition, the aim of every therapeutic measure of value in this disease. It is due to improved nutrition and strengthened resisting power that we have fever, cough and sweats diminished, and weight increased. I am against the advice found in most works on therapeutics to increase the dose of creosote as long as the stomach will tolerate it. This plan had some excuse as long as it was believed that the drug exerted a direct action on the bacillus ; but since that view has been abandoned, the "limit of tolerance" plan has no rational foundation. We do not give creosote to kill, or inhibit the bacilli, but to get the results enumerated above. Hence, we should regulate the dose to that end, and not go beyond the quantity necessary to attain that end. I have seen more than one poor patient have added to his sufferings a deranged digestion, when a victim of the "limit of tolerance" method of administering this drug. When this limit is ascertained, it is too late, as the damage has already been done, and time and vitality are lost in repairing this damage.

Besides these two drugs we have the whole pharmacopoeia, and I believe we should not hesitate to call on it to meet symptoms as they arise. We must control the cough sufficiently to see that it does not interfere with sleep and rest. We must relieve pain, control sweats, keep the eliminative functions in working order, and help the appetite. In doing this, however, we must not forget that the ultimate end of all our treatment is to improve nutrition, and must therefore never employ any medicine which can have either an immediate or remote effect in deranging digestion, or otherwise interfering with our chief object.

A paper on this subject would be incomplete without mention of the aid furnished to the preceding remedies by hydrotherapy. The powerful effect of water externally applied in improving nutrition is but too little realized. Aberg, Winternitz, Brehmer, Ziemssen, Baruch and many others have long employed this treatment in consumption with the most excellent results. In order to

obtain these results, one must have a thorough knowledge of the physiological action of water, and of the technique of administration. In the hands of the unskilful it is a dangerous remedy, as the slightest mistake in determining the proper measure to be employed, the duration of the treatment, and the temperature of the water will cause a failure to benefit, and may do much damage.

To summarize, the chief points to which I have endeavored to draw your attention are:

First.—That every method of treatment of pulmonary tuberculosis, which has stood the test, has for its prime object the improvement of nutrition.

Second.—That we cannot become narrow advocates of any one remedy, system, or method, but owe it to our patients to employ every available means that will lead to improved nutrition.

Third.—That we must take into consideration every circumstance connected with each individual patient, and modify our remedies, both in their selection and application, according to the needs of the case.

Treat the patient, and the patient will take care of the disease.

Dr. R. S. Lamb congratulated Dr. Randolph upon reading one of the most admirable papers presented before the Society. In regard to the method of overfeeding consumptives, Dr. Lamb feels that it has often been followed at the expense of concurrent diseases of the heart and kidneys in these patients. Both organs are doing their utmost to accomplish the ordinary needs of the system; the increase of fluids and the increased digestive interchanges from overfeeding furnish a burden which cannot be borne.

Dr. Hunt also congratulated Dr. Randolph upon his paper. There were two points Dr. Hunt wished to emphasize, first, that sending consumptives away from home removes them from that sympathy and advice which are important factors in the treatment of the disease; second, that Trudeau employs tuberculin in addition to the rest and dietetic treatment, thus producing an increased resistance, with less likelihood of recurrence.

Dr. Nichols said that Dr. Randolph had taken a very rational view of the dietetic problem in consumption. The powers of digestion and excretion are really better than we give them credit for. The important indication is to increase the body weight; slender persons are less resistant to the tuberculous process, because the oxidation in the tissues is not so good. The body weight and the body tissues must be increased. Milk and eggs alone do not produce the desired effect. Dietetic principles require the

production of 2,300 calories at rest; in tuberculous patients this amount and more is required to replace the waste of disease, or about 2,500 calories. To produce this amount of heat the consumption of four quarts of milk and three dozen eggs per day would be required, which is impossible. The food value of milk and eggs has been overestimated. For the upbuilding of any debilitated person a mixed diet will be better than an exclusively milk and egg diet. Hutchinson is the authority for the value of the mixed diet; the milk and eggs are of value when they are used in addition

He agreed with Dr. Randolph's views upon cod-liver oil; it is only a fatty food and it cannot be given in sufficient quantity to do much good. This being the case, any reliance upon cordials or extracts of cod-liver oil is absurd. The Russell emulsion must be placed upon the same plane with cod-liver oil—it is only a fatty food. The claim that vegetable fats are better digested than animal fats has been disproven by investigation; 95 per cent. of the fats of milk and eggs are digested and only 75 per cent. of vegetable fats.

Dr. Nichols said that the paper was admirable throughout, but his interest was particularly arrested by certain points in dietetics.

Dr. Chappell felt that the most neglected feature in the treatment of tuberculosis is rest. He agrees that the important factors are rest, food and fresh air; but rest is not often enough insisted upon. We let our consumptives go about too much; we even allow tuberculous children to go to school. Absolute rest must be insisted upon at the earliest sign of the disease; he himself had been too neglectful of this point. He decried the practice of subjecting consumptive patients to the wear and tear of long journeys.

Dr. Kober congratulated the Society upon hearing Dr. Randolph's paper and upon Dr. Nichols' discussion of dietetics in consumption. Dr. Kober endeavors, in teaching, to emphasize that as tuberculosis is a wasting disease, the proteids and the other food elements must be forced, but only so far as is safe. The object must be to supply food not only to replace the loss from wear and tear, but also from the waste of disease. The fat ration must be increased from 60 gm. to 80 gm. per day; other foods may be supplied in about the ordinary amount. Delicate cereals are the best of the carbohydrates; potatoes are not so good. These principles apply also to all wasting diseases and to convalescence.

Of course, the necessary supply of fresh air appealed to him with special interest. At the Washington Grove Sanitarium there are at present 12 cases under treatment; unfortunately none is in the incipient stage. One case, however, received fairly early in the disease, has gained greatly and will probably be

cured. There is not much hope for the others, as they were sent to the sanitarium as a last resort, but they have all made some gain. Almost uniformly after the patients are admitted the fever subsides, the heart-action improves, and the strength is augmented.

Rest is the most important item of treatment, especially indicated in pyrexia ; under it, all the patients at Washington Grove have made substantial gain in weight.

It is a mistake to think that the same advantages can be had in the city as attend treatment in the country. Exhalation from thousands of lungs, chimney products and street dust foul the air, diminish the oxygen and increase the carbon dioxid. For these reasons the patients at Washington Grove do better than they could in the city. Those who have been at both places like the surroundings here better than they do the Adirondacks ; there is less rain and it is not so cold.

He closed by reiterating that the food should be fats and carbohydrates to supply increased heat production and increased weight.

Dr. Wilkinson said that while he does not treat tuberculosis, he wished to say a few words in the discussion of the subject. He had lived for three years in El Paso, Texas, and had observed many patients with consumption who had come west for the climatic treatment. Nearly every case with a good family history got absolutely well. He feels convinced that intelligent persons, who are able to go west with means of obtaining a comfortable livelihood, will do infinitely better in the dry, sunshiny climate of the Rocky Mountains than they will here.

Dr. Phillips said that he had never heard a paper read before the Society more rational and comprehensive than the one just presented by Dr. Randolph. The Society was to be congratulated upon this contribution to its transactions. He for one could find nothing to add to the paper, nor was there anything he could subtract.

Dr. Randolph thanked the members for the cordial reception of his paper and for the complimentary remarks made upon it in the discussion.

CASE OF SEPTIC ENDOCARDITIS.*

BY STERLING RUFFIN, M. D.

Washington, D. C.

Dr. Ruffin presented his case of septic endocarditis as a further contribution to the subject already well considered before the Society by Drs. J. D. Thomas and Jas. Dudley Morgan. The history of the case was as follows: The patient, a white man, had been admitted to the Geo. Washington University Hospital on two occasions. At his first admission, he walked into the hospital with a temperature of 102. The fever declined with rest in bed, purgation, and proper diet. The patient greatly improved and, against protest, walked out of the hospital January 13, 1906 and went home. He returned for treatment January 19, still able to walk but evidently very ill. His condition was critical when an examination of his heart was made, which revealed the signs of an endocarditis of some sort. Whether the condition was simple or septic was difficult to decide and blood cultures were taken. The patient died before the cultures were completed; but the diagnosis of septic endocarditis was made at autopsy, and streptococci were found later in the cultures.

During his illness the patient had an irregular fever, profuse sweats, and much prostration. Examination of his blood showed: January 13, red cells, 3,500,000, white cells, 6,400, haemoglobin, 5 per cent. January 18, reds, 3,500,000, whites, 9,800, haemoglobin, 45 per cent. January 26, reds, 2,726,000, whites, 14,800, haemoglobin, 40 per cent.

The features pointing to the diagnosis of septic endocarditis were: irregular fever, sweats, prostration; those pointing to simple endocarditis were; no history of infection, no leucocytosis, no evidence of embolism.

Dr. J. D. Thomas said that the speciemen presented by Dr. Ruffin showed most most beautifully the lesions of infective endocarditis, and inquired if the source of the infection had been found; suggested that it might have come from the gallbladder.

*Reported with specimen to the Medical Society, February 7, 1906.

Dr. Claytor said that he was interested in the great size of the heart exhibited. The acute infective process was probably engrafted upon a chronic endocarditis, as it is highly improbable that such advanced hypertrophy could have developed in the short course of the acute disease.

He emphasized the difficulty in making the differential diagnosis between septic and simple endocarditis; the two conditions very closely simulate each other. He related the following case history: A man came to the hospital suffering with an irregular fever, accompanied by chills and sweats. There were no heart symptoms; and no malarial parasites could be found, though the fever declined under the administration of quinine. The pyrexia returned, however, and after repeated examinations, a mitral murmur was discovered, which grew progressively worse. Two weeks after the murmur appeared, hemiplegia developed. Although no growth was obtained after taking blood cultures, the diagnosis seemed clearly to be ulcerative endocarditis. But the patient recovered except for the persistent murmur and the hemiplegia. Cases that show symptoms of septic endocarditis, are therefore not invariably fatal.

Dr. Fremont-Smith inquired of Dr. Ruffin whether there had been a true aortic stenosis or whether the systolic murmur was of the Flint type, accompanying the insufficiency.

Dr. Bishop said that Dr. Ruffin's case interested him on account of the existence of a septic endocarditis with no discoverable source of infection. As in certain nervous diseases, the pneumococcus and bacillus typhosus have been found in the spinal cord, in the absence of pneumonia or typhoid fever, he thought that obscure foci of infection of this sort might be the sources from which a septic endocarditis might arise.

Dr. Ruffin, in closing the discussion, said that the source of infection had not been found in his case, certainly it was not in the gallbladder, the swelling of which was due to occlusion of the duct by reason of the secondary engorgement in the bowels and stomach. The infection may have come through the tonsils. He agreed with Dr. Claytor that the ulcerative process in this case was engrafted on a chronic endocarditis. Old lesions are vulnerable to any chance wandering infection. The differential diagnosis is often difficult as had been said; and after all, the only difference between the two varieties of endocarditis is one of degree. Some organisms may produce either type. The blood examination is the only way in many cases to come to a conclusion. In some instances the course of the disease resembles closely typhoid fever; in others, malaria is simulated.

He said, in reply to Dr. Fremont-Smith, that there was no true aortic stenosis.

SOME EYE CASES.*

By R. S. LAMB, M. D.

Washington, D. C.

1st. Gonorrheal ophthalmia in a boy; admitted to the Episcopal Eye, Ear and Throat Hospital, Sept. 7, 1905, with a purulent discharge from each eye, the suppuration having existed for 7 days in one eye, and 4 days in the other. This boy had been under treatment by a general practitioner before coming to the hospital, but in spite of recognition of the nature of the disease, the treatment had been half-heartedly and indifferently given. The result of this neglect was apparent in the boy's eyes, which plainly presented the effects of prolonged suppuration. His general condition was poor; he was marasmic and his reparative powers were feeble. In spite of the utmost vigor and care in the treatment at the hospital, the final results were disappointing; the left eye ruptured and required an iridectomy: canthotomy was done on the right eye to prevent rupture. It was subsequently learned that the infection had been received by the boy's playing with a catheter which had been thrown away by some unknown person and which the boy picked up.

2d. Gonorrheal ophthalmia in a woman, 50 years of age. This patient's eye had been infected as a result of an injury, and the infection had been transmitted to the other eye. She also had had indifferent treatment by a general practitioner for one week before admission to the hospital. The most careful treatment at the hospital was ineffectual in preventing permanent blindness; as there was rupture of the left cornea, and ulcer of the right, when she was first seen at the hospital. The patient narrowly escaped a panophthalmitis of the left eye, and actually had glaucoma of the right when admitted.

3d. Optic atrophy in a man, who came to the Episcopal Hospital two and one-half years ago. The usual treatment of potass. iodide and strychnia was kept up for three months with a noticeable loss of vision. These measures failing, Dr. Lamb obtained permission and began subconjunctival injections of nor-

* Reported to the Medical Society February 14, 1906.

mal salt solution, in addition to the before-mentioned means, and persisted for eight months, the injections being given three times a week ; both eyes treated at each sitting. At the end of this period of treatment, the patient could distinguish the difference between two daily papers. During Dr. Lamb's absence from the city during the summer, the injections were discontinued for a time and the patient lost ground. But the treatment was afterward resumed and continued to this time. The patient is still able to work in spite of all the ophthalmoscopic appearances of complete optic atrophy ; he works in a public building, cleans 14 rooms and a hall 183 feet long, and makes nine beds daily. Dr. Lamb was unable to attribute the good results to anything else than the normal salt injections.

4th. Double Interstitial Keratitis in a colored youth. Both eyes were in very bad condition when the boy came under observation. He was treated with potass. iodide and mercury, and by injections of normal salt solution. While it must be admitted that the condition sometimes disappears without treatment, it does not often do so when the stage of anterior staphyloma is reached, which was present in this case. That this patient's vision is in large measure preserved is indicated by the fact that this spring he is to graduate from the Manual Training School.

Dr. Hagner said that among the large number of cases of gonorrhoea that come under his observation, and in spite of the careless habits prevalent especially among dispensary patients, he very rarely sees a case of ophthalmia. He asked if the normal eye is resistant to the gonococcus, and hoped the ophthalmologists present would speak on that point.

Dr. Kober said that ten per cent. of the blind in institutions, and a large percentage of the blind among the population at large incur the affliction through gonococcus infection. Since these facts obtain, he could not think that the eye is resistant to that organism, and held the opinion that the infrequency of the ophthalmia in genito-urinary practice is due alone to good fortune.

Dr. Wilkinson said that he was interested in the results of the use of normal salt solution in Dr. Lamb's cases. Dr. Wilkinson had made a study of saline injections in 1897, and had found the method useful in only a few diseases. He had got no good results whatever from its use in optic atrophy. In Dr. Lamb's case it was unfortunate not to know the exact degree of vision before and after the treatment, but Dr. Lamb was to be complimented upon the results of his patient treatment of this case.

Dr. Butler inquired of Dr. Lamb what was the rationale of the effect of saline injections in optic atrophy. Dr. Butler expressed doubt that any purely local treatment could produce any effect upon a disease process back of the eye. In the case presented by Dr. Lamb there was evidence that the condition was due to some spinal disease.

Dr. Loren Johnson said that in children the eye does not seem to possess much power of resistance against the gonococcus; ophthalmia develops very early after the infection is received.

Dr. Belt said that no gonorrheal patient can safely be careless as regards his eyes, and that the duty lies with the physician to give warning of the danger of ophthalmia. The cases of this disease in adults are comparatively few because of the widespread knowledge of its character and severity. But he himself believes that the eye is to some extent resistant to the gonococcus.

As in Dr. Lamb's case, where a corneal ulcer has developed in a poorly nourished child, the chances of saving the eye are always poor. Where the nutrition is good, not many eyes are lost at this day. While formerly the incidence of ophthalmia in institutions was 20 per cent., since Credé's method has come into vogue, and where it is routine treatment, the morbidity has fallen to one per cent. For prophylactic purposes, argyrol should be substituted for silver nitrate; the former is very efficacious and is painless even when applied in 25 per cent. solution.

With reference to Dr. Lamb's case of interstitial keratitis, Dr. Belt said that though most cases get well in from five to six months, many drag on for two or three years, and Dr. Lamb should be congratulated on the excellent result obtained in such a severe case.

Dr. Dufour said that the escape of the eye from infection in gonorrheal cases is due to good luck rather than to any special resistant quality of the eye. The conjunctiva is a very absorbent membrane and is easily infected. The cornea is the tissue first invaded by the gonococcus and the most damage is done to that membrane. He adheres to the use of silver nitrate in ophthalmia and does not find the albuminates of silver so effective; the former is quite certain in its effects.

In interstitial keratitis, the best treatment is constitutional; but he is in the habit of using locally a 1–60 solution of formalin in the cocainized eye,— these applications seem to harden and clear off the cornea.

He believes that the injection of saline solution in optic atrophy is quite useless. As these patients do not always go entirely blind, Dr Lamb's case may have been only apparently benefitted by the injections. The nerve is the seat of sclerosis in this disease, and there is no way of repairing the tissue lost by this degeneration.

Dr. Belt took occasion to correct the impression that he did

not use silver nitrate in ophthalmia; on the contrary, he believes that after ophthalmia has become established, silver nitrate is the sheet anchor of treatment. His advocacy of argyrol was for its employment for prophylactic purposes.

Dr. McKimmie said that he had been much interested in Dr. Lamb's first case of ophthalmia and had watched his strenuous efforts to save this boy's eyes. The futility of the most skilful and painstaking treatment to control a gonorrheal ophthalmia after it has gotten under way, demonstrates that it is criminal to undertake the treatment of this disease in an ignorant or half-hearted way.

He was not prepared to commend the treatment used by Dr. Lamb in the optic atrophy case; but there is still so much to be learned about this affection that the normal salt injections should not be condemned without a hearing. If the atrophy can be arrested by increasing local nutrition in any way, that way should be given a trial.

Dr. Dye desired to congratulate Dr. Lamb upon the result achieved in the case of the boy with ophthalmia. He himself had repeatedly given the anesthetic for Dr. Lamb to this boy so that the eyes might be properly dressed. This circumstance shows how serious the condition was; he had not thought that such a good result was possible.

Dr. Lamb said, in closing the discussion, that he had presented the cases before the Society partly for the purpose of getting the members better acquainted with ophthalmic conditions, and partly to indicate what is being done in this line of work.

Proper treatment produces uniformly satisfactory results; but unfortunately the patients that recover are never seen by the general profession. Many cases are self-treated, many are treated by druggists. That such conditions obtain with such results as those presented are painful facts about which he feels very strongly.

In reply to Dr. Hagner's question, he said that there are two bacteria which can infect the healthy cornea, they are the gonococcus and the Klebs-Loeffler bacillus. There can be no doubt about the former. The conjunctival sac is capable of taking care of all other infectious organisms.

To Dr. Wilkinson, he replied that in the case of optic atrophy, the man's vision was so bad when he first presented himself for treatment that he had to be led to the clinic, as he could not see even a street car in his path. He is now able to come alone.

Dr. Butler's remarks upon this case were rather fair, but it is probable that he might do good by inducing a state of hypernutrition with the normal salt injections. Dr. Lamb has, of course, studied the pathology of the disease and the probable *modus operandi* of the injections yet is unable to prove *exactly* how the effects of the treatment are produced.

Not all cases of optic atrophy, however, are cases of pure sclerosis, as indicated by Dr. Dufour; some do not at first present any appearances of sclerosis, and not until later does the white or grey appearance occur.

He thanked the members for their generous discussion.

THE SURGICAL TREATMENT OF COMPLICATIONS AND SEQUELS OF PNEUMONIA.*

By W. P. CARR, M. D.

Washington, D. C.

There is still more or less confusion in the nomenclature of the many varieties of pneumonia, and marked differences of opinion as to etiology, prognosis and the relative frequency and importance of complications and sequelae. Most authorities, however, recognize the following: (1) croupous pneumonia, (2) catarrhal pneumonia, (3) aspiration pneumonia, (4) septic pneumonia, (5) embolic pneumonia, (6) traumatic pneumonia, (7) atypical pneumonias, frequently infectious, and of uncertain origin, (8) syphilitic pneumonia, and to this list should also be added, (9) the pneumonia following influenza and psittacosis, or infectious pneumonia contracted from parrots.

Nocard in 1893 demonstrated a bacillus from the spinal marrow of a diseased parrot, which he describes as a short, thick bacillus with rounded ends; aerobic and anaerobic, developing quickly on ordinary culture media, provided they are neutral or alkaline, not liquefying gelatine, nor producing lactose fermentation, nor coagulating milk, and decolorizing by the Gram method. This parrot was one of three imported into Florence in 1894. They all died of a diarrhoeal disease, and were believed to be the cause of an epidemic of pneumonia in persons handling them. Certainly a number of persons, in separate localities, handling these birds were attacked and several died of pneumonia, the organism being recovered from the blood of at least one case.

A commission was appointed to investigate the matter, of which Gilbert and Fournier were members. They found the germ in a parrot obtained from the same dealer, and found it in the heart blood of a person dying of the disease. Nothnagel recognizes

*Read before the Medical Society, February 7, 1906.

this germ as an established cause of infectious pneumonia. The germ is difficult to distinguish from those of hog cholera and pseudo-typhoid

There is some question as to whether pneumonia following influenza is directly due to the germ of influenza or whether it is produced by the diplococcus pneumoniae. There seems to be good reason for believing that both conditions may be true. Certainly grippe pneumonia presents a clinical history differing greatly from that of ordinary croupous or catarrhal pneumonias and the pathological findings are different. In my opinion, therefore, it is entitled to separate consideration.

To simplify matters, we may say that grippe pneumonia is caused primarily by the germ of influenza sometimes assisted secondarily by the pneumococcus or streptococcus, or occasionally by the staphylococcus and other pathogenic organisms.

Croupous pneumonia is caused in the great majority of cases by the diplococcus pneumoniae; occasionally by the streptococcus, and more rarely by the staphylococcus or other pathogenic organisms. Catarrhal pneumonia, traumatic, embolic, septic, and aspiration pneumonias by the ordinary pus-producing germs. As all of these germs are capable of producing inflammation in the tissues generally, and as they have apparently good opportunities to get into the tissues by the blood through the thin-walled capillaries of the lung, by the lymphatics, and by direct extension, in seems strange that complications are not of even more frequent occurrence.

But while no single complication is very common the number of complications likely to occur is large and the total percentage of deaths due to these complications is great. Pleurisy, empyema, serous pericarditis, purulent pericarditis, endocarditis, meningitis, cerebro spinal meningitis, peritonitis, nephritis, phlebitis, encephalitis, arthritis, calitis, otitis, parotitis, conjunctivitis and general mucous membrane infections are all complications or sequels of this disease. Nothnagel says, "In fact the cause of death is due either to simultaneous infection of other organs such as the meninges, pleura or pericardium, or to a toxemia, the degree of which depends, not upon the area of inflammation, but on the virility of the infection and condition of the patient." Pye Smith says, "It will be noted that the deaths at earlier ages are generally accompanied by some of the untoward complica-

tions to be mentioned presently, whereas most of the fatal cases in the later decades are uncomplicated." I cannot agree with the latter assertion. I believe that death is due to complications in the majority of cases at all ages.

The mortality from croupous pneumonia, which is less, perhaps, than from any of the other forms, is from 17|to 20 per cent. Wells collected 223,730 cases with 40,276 deaths, a mortality of 18.1 per cent. Morrill's statistics give the mortality 17.9 per cent. Goodhart had 25 deaths in 123 cases.

The death rate is greatly influenced by age as shown by the analysis of 708 cases at St. Thomas Hospital. For cases under 20 years of age the mortality was 3.7 per cent., for the third decade 22 per cent., for the fourth decade 30.8 per cent., for the fifth 47 per cent., for the sixth 51 per cent., and for the seventh decade 65 per cent.

I think there can be no question that at least half the deaths from croupous pneumonia are due to complications or sequels, and that in other forms of pneumonia, particularly in grippe pneumonia, a considerably larger proportion of deaths is due to the affection of other organs. I also believe that this high mortality may be greatly reduced by prompt diagnosis and proper surgical treatment.

I shall consider only those complications that are amenable to surgical treatment. *Pleurisy.*—Pleurisy is the most common complication of pneumonia. It occurs to some extent in all cases, except possibly in some central pneumonias, and may be regarded as part of the disease rather than a complication. But when well marked effusion occurs, it should be regarded as a complication. Osler says "If fever persists, look for pleurisy." Von Bergman says "In any case where the effusion is abundant it is imperative to remove a certain portion." Nothnagel, in 1,501 cases of croupous pneumonia, found pleurisy a serious complication in 59, or nearly 4 per cent. In grippe pneumonia I believe it occurs much more frequently. According to Hare, in the German epidemic 1889 to 1890, pleurisy occurred as a complication in 27 per cent. of the cases of grippe. While some localized pleurisy is usually present from the beginning, pleuritic effusion, as a serious complication, usually occurs about the time of convalescence or a few days later. It is one of the common causes of death.

In any case of pneumonia, that does not pursue a typical or satisfactory course, careful examination of the chest should be made daily. Pleurisy, empyema, abscess of the lung or other thoracic complications will thus be detected early, and suitable treatment inaugurated. Whenever a pleuritic effusion reaches the middle of the scapula, or when smaller effusions remain stationary for some time, a portion of the fluid should be withdrawn by aspiration, and aspiration should be repeated as often as necessary to prevent any large accumulation of fluid. This operation is easily performed, and can be made almost painless by local anaesthesia. It is perfectly safe if proper antiseptic precautions are taken and fluid slowly withdrawn and not too much at a time. The danger occurs where there are very large accumulations, or where the lung has been allowed to remain compressed for a long time. *Therefore large accumulations should not be allowed to occur.*

Many cases of pleurisy recover without paracentesis even where there is large effusion ; but in such cases we almost invariably have a long and tedious illness and sinking in of the chest wall because the lung cannot expand, and a damaged lung is the final result. Large serous effusions into the pleura compress the lung until it becomes solidified, interfering with the circulation and causing hyperaemia, by collateral fluxion, of the other lung. Adhesions form, and daily become firmer; so that in time it becomes a matter of impossibility for the compressed lung to again expand. In such cases the withdrawal of large quantities of fluid is dangerous. As fluid is withdrawn, atmospheric pressure forces the compressed lung downward, pulling upon the parietal pleura, to which it is firmly attached. The greatest strain comes upon the pleura of the mediastinum, containing the phrenic nerve and closely attached to the great vessels at the base of the heart. The sudden collapse that sometimes occurs may be accounted for in this way. Vascular adhesions may be torn and serious hemorrhage occur, increased by the sudden removal of pressure in the thorax. But if pleural effusions are never allowed to get large there can be no such dangers.

Should the fluid continue to reaccumulate rapidly after several withdrawals, thorough drainage should be established by resecting a portion of a rib. This operation, while it seems somewhat

formidable, is remarkably free from danger, and is, in my opinion, one of the most satisfactory operations of surgery. It will be more fully discussed under the head of empyema. Pleurisy, not complicated by tuberculosis of the lung, treated as indicated above will almost invariably terminate in recovery, and in *complete* recovery without *deformity* or *damage* to the lung.

Empyema or metapneumonic abscess is a frequent complication or sequel of pneumonia. Nothnagel found it in nearly 2 per cent. of his cases of croupous pneumonia. I believe it is of more common occurrence in grippe pneumonia. I have operated upon 17 cases of empyema, 9 of which followed grippe, 2 followed croupous pneumonia, one, tubercular abscess of the lung, one, puerperal fever, and 4 were due to wounds of the chest. All these cases recovered from the operation and all were completely cured except the tubercular case. Even this case was much benefitted for a time. Several of these cases were in extremely bad condition at the time of operation and I have been much impressed by the lack of mortality and by the prompt relief shown in every case.

If the rule be followed of making careful physical examinations daily of all cases of pneumonia that are not progressing favorably, and of withdrawing fluid accumulations before they become dangerously large, very few cases of empyema will escape detection in a comparatively early stage. In a few cases of localized empyema, or metapneumonic abscess, situated between the lung and mediastinum, or in the cleft between two lobes of lung, the diagnosis may be difficult. But such cases are rare, and careful examination will usually reveal them sooner or later.

When pus is aspirated it is well to have it examined bacteriologically, in order to determine the nature of infection. Watson Cheyne says that in children the most common organism found is the pneumococcus; in adults the streptococcus; but combinations of the two are also met. Nettle's tables give the following figures as to the relative frequency of organism found:

	Children,	Adults.
Pneumococcus, ...	53.6 per ct.,	17.3 per ct.
Pneumo. and Streptococcus, . . .	3.6 "	2.5 "
Saprophytic organisms, ...	10.7 "	0 "
Staphylococcus, ...	0 "	1.2 "
Streptococcus, ...	17.6 "	53. "

Effusions of pneumococcic origin are said to be absorbed spontaneously in rare instances. According to all authorities, the prognosis, other things being equal, is best when the pneumococcus alone is present, and worst when putrefactive organisms are present.

Pus in the pleura should be regarded and treated as abscess. As soon as the diagnosis is made free drainage should be established by resection of part of a rib. Some surgeons have recommended the resection of two or three ribs, but I believe this to be bad practice. It is true that in some chronic cases where the lung is greatly compressed for a long time, simple drainage will not cure, and steps must be taken to close the cavity. In such cases Estlander's operation or decortication of the lung, or a combination of both, will be necessary. But these extensive operations are not to be thought of in acute cases, nor in chronic cases when the patient is in bad condition. Any compromise between simple drainage and such complete operations is worse than useless. Drainage is just as effective with resection of one rib as with resection of three or four.

Patients suffering from empyema are not good subjects for anaesthesia of any kind. Local anaesthesia is dangerous on account of weak heart and the unavoidable shock of seeing and knowing what is going on. I believe that ether is far safer, if not continued too long. In nearly all my cases the patient has been kept under the anaesthetic not longer than five minutes. This gives abundant time for the resection of one rib, examination of the cavity with the finger, the insertion of two large drainage tubes and closure of the wound with about two sutures. The anaesthetic is then stopped and the cavity washed out with salt solution while the patient is recovering from the anaesthetic. In such cases, I think, the importance of time can hardly be overestimated ; and for that reason, if no other, I protest strongly against the useless resection of more than one rib.

Neither does it matter at what point the opening is made, except for the saving of time and unnecessary traumatism. Drainage is just as effective from the anterior wall of the chest as from the posterior. Two large drainage tubes should always be inserted ; one not less than one-half inch, inside diameter, passing just through the chest wall, and another somewhat smaller passing to the deepest part of the cavity. In washing out, water is

run in through the long tube and returns through the short larger one.

When the pus is in the lower part of the pleural cavity between the lung and diaphragm, where it is most commonly found, I resect about an inch and a quarter of the seventh rib a little anterior to the axillary line, as this is a point not covered by much muscle, and is convenient for dressing. But in localized metapneumonic abscesses the opening should be placed according to the situation of the abscess. As soon as all tension is removed from the pus, its absorption ceases, the patient's temperature drops and he rapidly improves.

Pus will never cease forming as long as any cavity exists, no matter how or where the drain is made. The cavity, however, rapidly diminishes in most cases by partial expansion of the lung, by bulging up of the diaphragm, by pushing over of the heart and pericardium and to some extent by sinking in of the ribs. Granulation tissue fills in any space that is left if not too large. It is not so much a matter of drainage as of providing a free exit for pus that is pushed out by a contracting cavity. It must come out freely so that no tension or pressure is kept on the contracting walls. It is self evident that if the operation is done before the lung has become solid or adherent, the cavity will close much more quickly. And where the lung is a small, solid, immovable mass in the upper pleural cavity, it may become necessary to close this cavity later by a second operation.

The important point, in drainage, is to afford easy exit not only to pus or fluid, but also to masses of coagulated lymph. These masses loosen up and come away abundantly sometimes a week after operating. And at the time of operation I have several times removed masses of coagulated lymph as large as my first and quite firm. A long pair of ring forceps, now commonly used for sponge holders, makes an excellent instrument for removing these masses.

Most of my cases have had large cavities, with the lung pretty well compressed for some weeks. In spite of this, however, it has closed in from two to six weeks. This result may be hastened, and suppuration diminished, by using antiseptic irrigation. For the first few days I have irrigated with salt solution, then using one per cent. ichthyol, then bichloride of mercury 1-2,000, and finally one-half per cent. formalin solution. The

formalin is most effective, but causes cough if used too early. The long drainage tube is gradually shortened and the large one removed when the cavity becomes quite small.

Gangrene of the lung is mentioned as a complication of pneumonia by nearly all writers but is very rare either as a complication or sequel. The diagnosis is not easy until portions of the necrotic lung are expectorated, the odor and character of the sputum making plain the nature of the case. Very few cases recover, when the gangrene is extensive, without surgical aid. Removal of the larger part of the necrotic tissue, and free drainage, undoubtedly favor recovery and prevent the nauseating discharge from passing through the mouth. Tuffier reported 47 cases operated upon with 60 per cent. of recoveries; Garre 122 cases with 18 recoveries; Quincke 12 cases with 7 recoveries.

In this connection I report the following interesting case referred to me at the Emergency Hospital by Drs. Mullen and Bailey:

Mr. Morris, aet 36, white, tailor, born in Russia; was healthy until he left Europe at the age of 13. At 17 had suppurative tonsillitis and acute pharyngitis, since then has caught cold on every slight exposure.

About eight months ago had grippe and pneumonia, affecting both lungs, which left him with a severe cough, more troublesome when reclining and in cold weather. He smokes habitually.

About six weeks before admission to hospital he was taken sick with chills followed by high fever, dyspnoea and distressing pain in right side of chest. Had night sweats. Expectoration became profuse and later of foul odor. Admitted to Emergency Hospital December 31, 1903. Condition poor, emaciated, weak, and anaemic. Temperature 102.5 to 103.5, pulse 124, but easily run up to 150 on exertion. Respirations 32 to 40. Coughing incessantly and expectorating large quantities of foul mucus. There was dulness of the whole right side of chest with flatness and absence of respiratory sounds in the lower half. Empyema and abscess of the lung were suspected.

January 1, 1904, the patient was placed on the operating table and given ether. Two ribs were resected, the pleura opened, and the whole lower lobe of the right lung found black, and so soft that I readily pushed my finger into it. There was no pus nor fluid in the pleural cavity, and no abscess; but the air cells of the necrotic lung were filled with foul mucus and no air was entering. I removed with my fingers several masses of necrosed lung as large as my fist and inserted two large drainage tubes.

The operation was completed in about ten minutes. The patient's temperature dropped at once to a lower plane, but some fever continued for a month. There was a profuse discharge for weeks of foul-smelling serum and chunks of necrotic lung, and a gradually diminishing expectoration. The patient's strength improved rapidly after the fifth day. At the end of four weeks the pulse, temperature and respirations were normal. Patient was sitting up and had a good appetite. It was not until the end of February that the wound entirely healed and he was able to leave the hospital. He went to Southern Pines, where he rapidly improved, and returned home after several months so fat that he could not wear his old clothes.

Pericarditis is a not uncommon complication. Hare collected 21,383 cases of pneumonia occurring in large hospitals of this country and Europe and found that pericarditis occurred in 266 or 1.24 per cent. of these cases. According to Thayer, it is often overlooked and probably occurs more frequently. This pericarditis is freqently purulent, and is then nearly always fatal unless drained. Kobert reports 35 cases of purulent pericarditis treated by open drainage, with 43 per cent. of recoveries. Aspiration is indicated in pericarditis whenever the fluid interferes seriously with the heart's action, and, if the fluid is purulent, free drainage of the pericardium should be established.

Abscess of the lung is a very rare complication, occurring in one or two per cent. of fatal cases of pneumonia. Recovery may take place without operation, but all authorities agree that the chances are better with drainage, and that when accompanied, as it freqently is, by metapneumonic abscess, drainage becomes imperative.

A still more rare but very fatal complication is arthritis.

Cavè reports 30 cases with 23 deaths. Two of these cases occurred in children, the others in middle or old age. Suppuration occurred in all but three. The arthritis developed in from a few days to two weeks after the initial chill. This arthritis is probably an indication of general septic infection.

My object in reading this paper is to urge earlier resort to surgical measures that are well recognized, but often used too late to save life or prevent deformity. If we never allow the lung to become long compressed and splenified there will be no need for the severer operations of thoracoplasty and decortication. Such operations should become obsolete.

Dr. Vaughan said that Dr. Carr's paper was of great interest both to the practitioner and surgeon. Many diseased conditions of the thoracic respiratory apparatus require surgical treatment. Serous effusions are best treated by aspiration. No time should be wasted for fear of injuring the lung. If the fluid reaccumulates after two or three aspirations, the pleural cavity should be incised and drained. He remembered the case of a man whose chest had been repeatedly tapped, with recurrence of the effusion. After the necessary drainage was established, the cavity closed in two or three weeks and the lung expanded to its normal limits.

In empyema, both the condition and the operation for its relief are more formidable ; many fatal cases are met with, particularly in children and old persons. No time should be wasted where pyothorax exists. He was very cautious about the preliminary flushing in these cases, and he always employs, first, normal salt solution and second, weak solutions of bichloride of mercury. He had never used formalin for this purpose, but thought that its employment would be beneficial. When drainage and flushing are not soon followed by expansion of the lung and obliteration of the cavity, thoracoplasty must be done. Estlander's operation is the best, always remembering that its employment is to secure collapse of the chest wall, not simple drainage. He had seen excellent results following its use.

Dr. J. Ford Thompson said that the subject of empyema interested him very much. He hoped it would be thoroughly discussed. He had operated for the condition very often, and had now three cases under observation—all of a serious nature; the lungs seemed to be badly compressed, but were now expanding and the patients were apparently recovering. He had done all the operations extant; in one case he took out sections of all the ribs and part of the scapula, and curetted the pleural surfaces. The patient went out of the hospital much improved, but with a persisting sinus.

He had seen an interesting case two years ago, with Dr. Adams. A year prior to the illness now spoken of, Dr. Thompson had resected a rib for a left-side empyema in the same child. This patient returned with empyema on the right side ; at the operation, pus was evacuated from the pleural cavity, but Dr. Thompson discovered also an abscess cavity in the lung, as big as an orange. This child was almost killed by the irrigation ; the abscess cavity communicated with a bronchial tube, and the fluid flowed out of the child's mouth. The irrigation was immediately stopped, and the patient eventually recovered.

Estlander's operation was very necessary at times, and there was no other method so good for its peculiar indications. He had often wrought cures by its employment ; but he would call attention to the frequent necessity of decortication of the lung in addition.

He had had fatal results in two cases from operations for pleural effusions. One patient was moribund at the time of operation and died in shock. In another instance, he aspirated for a serous effusion ; this patient also died in collapse some hours after the operation. Too much fluid was withdrawn at once.

He could not agree with Dr. Carr in the opinion that the anterior incision was as good as the posterior; it was against all rules of surgery. Dr. Thompson invariably made his incision as far back as possible, and had the patient lie so as to keep the incision at the lowest level. He always used two large tubes, and believed that the most perfect drainage was necessary. He had seen the happiest results from the surgical treatment of empyema. In most of his cases the operation had unfortunately been done late ; but if the condition was recognized early, and the surgeon called at once, there should be no mortality, and early expansion of the lung would be secured. He summed up by saying that the operation relieved and cured, and should be done very early.

Dr. R. S. Lamb asked Dr. Carr to state whether, in his experience with Estlander's operation, the bronchial opening closed. Dr. Lamb remembered a case in which there remained a large permanent opening connecting the external chest wall with a bronchial tube. The patient could blow out a candle flame held close to the opening.

Dr. Keech related the history of a boy who, in 1863, had been sent home from an army hospital at Annapolis to die. There had been a pleurisy with effusion on the left side, and when he first saw the patient the heart had been pushed to the right of the median line. He urged an operation, but before he could get the consent of the patient's family the heart had reached a point to the right of the right nipple. He finally succeeded in getting their consent to have Dr. Frederick May come out from the city. Dr. May concurred in the diagnosis of empyema, and introduced a canula through an incision, drawing off a gallon of pus. The young man recovered and was living a year or two ago. Dr. May said nothing about irrigation, but on his own motion Dr. Keech flushed out the cavity with sterilized water. He recognized the great advances that had been made in the recent methods of treatment.

Dr. Carr, in closing the discussion, said that his idea in reading his paper had been to urge the employment of early surgical treatment. Everybody agreed with the general principles involved, but surgical aid was sought too late. Aspiration should be done in small effusions, when the lung was no higher than the nipple level ; thus serious complications may be avoided. When pus is present, thorough drainage must be secured, but the anterior incision is as good as the posterior, since the pus is always pushed out by the collapsing walls of the cavity ; it never flows out by gravity.

Pus will be secreted so long as a cavity remains a cavity, and herein lies the indication for thoracoplasty. Drainage and thoracoplasty are different and for different purposes. When the pleural cavity does not close by the expansion of the lung, drainage is no longer sufficient, and the cavity must be closed by the free excision of ribs. Thus arises the necessity for doing operations in time to allow for expansion of the lung.

To Dr. R. S. Lamb he replied that in Estlander's operation no opening is made in the lung; if any exisits, it is accidental and usually closes spontaneously.

PROSTATIC NEUROSES.*

By E. F. KING, A. M., M. D.,

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Nervous disturbances, ranging in severity from a simple formication to intense neuralgic pain, with general nervous breakdown or sexual neurasthenia, and from slight interference with urination to complete retention of urine, are of common occurrence in prostatic disease, often cause intense suffering and frequently are not recognized as of prostatic origin.

The prostate, surrounding the urethra in front of the bladder, is made up of small glands, 15 to 30 or more in number, whose ducts discharge into the prostatic urethra about the *caput gallinaginis*, smooth and striated muscle fibers, nerves, blood vessels, lymphatics and connective tissue, all inclosed in a tough fibrous capsule.

The muscle fibers, considering the size of the organ, are more numerous than in any other viscus.

The nerves are branches of the inferior hypogastric plexus of the sympathetic system. This plexus receives fibers from the third and fourth sacral nerves, coming off from the anterior columns of the spinal cord and originating in the peduncles of the cerebrum. Within the prostate Timofeew describes a bewildering tangle of nerve fibers, both motor and sensory, ganglia, ganglionic cells and terminal corpuscles of Krause or Pacini. Considering the richness of this nerve supply and especially the

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number of nerve centers, the frequency of nervous symptoms in prostatics is not remarkable.

While all prostatics are doubtless more or less affected nervously it is true that the most severe cases occur in those of a nervous temperament, or whose general health is broken through some other cause.

Some local inflammation is the principal aetiological factor in these nervous conditions, and since gonorrhoea is to blame for a large proportion of prostatic inflammations it may be accepted as the main cause of prostatic neuroses. Sexual excess, masturbation, *coitus interruptus*, the injudicious, or unskilful use of sounds, or of strong solutions in irrigation, and other accidents, are additional causes. Horseback riding and bicycling frequently cause trouble in prostates already diseased, but it may be questioned whether they can do the same in a normal prostate.

Three neuroses have been distinguished. While occasionally found alone, generally we have two and sometimes all three to contend with. The three forms as given by Peyer are—

1. General hyperaesthesia of the prostate.
2. Hyperaesthesia of the prostatic urethra.
3. Irritability of neck of bladder.

In the first form, which is of rather infrequent occurrence, the prostate is normal in size and consistency, more or less sensitive on pressure and is the seat of a constant pain, which may be so severe as to prevent rest in any position. The sensation complained of is that of tension, or pressure, or painful contraction, and with this pain come cramps in the calves, or in the soles of the feet, headache, sleeplessness, loss of appetite, depressed spirits, increased pulse rate, irritable bladder and phosphaturia. A few filaments may also be present in the urine, but it is otherwise normal. Physical exertion causes an exacerbation of these symptoms.

Hyperaesthesia of the prostatic urethra is much more common as a separate condition though frequently associated with one or both of the other varieties. On rectal examination the side lobes appear normal, not sensitive on pressure, but a sharp pain is caused by passing the finger ever so lightly along the interlobar sulcus which marks the course of the urethra. On examination with an olivary-tipped bougie the prostatic urethra is found very sensitive and the operation may call forth cries of pain, and a

feeling of faintness, or a complete swoon, may follow. The endoscope gives a picture of hyperaemia, the mucous membrane thickened, with small excoriations here and there, and a wrinkled rather than the normal smooth appearance.

Neuralgic pains are felt in the testicles, the *vasa deferentia*, the glans penis, in the sacral region, on the anterior surface of the thighs and in the abdomen, especially under the lower ribs. The testicles and cords in these cases appear normal, but the pain in them is so excruciating that at times rest in bed is absolutely essential. Pain in the testicles is generally confined to one of these organs, and when this is the case the corresponding lobe of the prostate will appear to be the more affected. Pressure on this lobe will increase the pain in the testicle. A neuralgia from an old epididymitis should be excluded.

In the sexual sphere as a result of hyperaesthesia come insufficient or entire absence of erections, premature ejaculations and noctural emissions.

The third form includes the various spasmodic strictures which are the result of a nervous irritability of the muscular fibers of the prostate. The mildest form is the so-called modesty stricture, which prevents the patient urinating in the presence of another person, or in an open urinal, or in a railway car. To accomplish his purpose his attention must be concentrated on the act, and any slight disturbance will hinder. Such patients seek a quiet place and wait for the flow to begin—perhaps for ten to fifteen minutes. Various devices are resorted to as aids to the act. The sound of running water, allowing cold water to run on the wrists and rubbing the scrotum or the penis or the suprapubic region with some cold substance are among such aids. One case is reported in which the spasm came on several times after the beginning of the flow and before the bladder could be emptied. This patient happened one day to urinate where the stream fell on a piece of stiff paper, and the resulting sound so fixed his attention that no spasm came. He carries writing paper in his pocket since that time and it is always efficacious. Early in this month a patient presented himself at Emergency Hospital who, to start the flow of urine, inserted his finger into the rectum.

A more severe form of spasm is accompanied by a neuralgia located at the neck of the bladder and with a frequent desire to urinate—as often as every ten to fifteen minutes. Sometimes

only a few drops are discharged but frequently a good quantity, as nervous polyuria accompanies this trouble. In some cases the patients will go for two or three hours without urinating, but when the desire comes it is so imperative that the clothing is wet before it can be unfastened. There is no pain, as a rule, in these cases; there is a good sized stream and the bladder is completely emptied.

In another class of cases, after waiting sometime a few drops will escape and then a spasm come on. After another period of waiting more will come and then another spasm, and even after a third attempt the bladder will not be emptied. In these cases urination is generally painful, the stream is small or the urine may come in drops. Observing such a patient in the act of urinating one is at times surprised to see the stream become suddenly round and full, and have considerable force, and as suddenly go back to its former dimension. This is due to a relaxation of the sphincter spasm and occurs in no other condition of the bladder or prostate.

Difficult urination is caused by the failure of the internal sphincter to relax. There is generally a burning sensation during urination and more or less pain either before or after the act. When there is complete retention it is frequently impossible to introduce a catheter without the previous instillation of cocaine or even a general narcosis. In such cases on withdrawing the catheter the urethra frequently grasps the instrument so tightly that considerable force must be used to extract it.

Continued spasm of the sphincter renders the bladder incapable of emptying itself, and there may be from 100 to 250 c.c. of residual urine. Cystitis may follow and even an ureteritis and pyelitis.

The urine may be normal but generally shows some pathological changes. A nervous polyuria has already been mentioned. Phosphates are frequently freely deposited. Sugar and albumen occur, generally intermittently. Oxalate of lime is common and indigo has been reported. Pus in any quantity indicates a bladder complication.

The prognosis should be guarded. In a majority of cases it is favorable, but where general nervous disturbances associated with anaemia are present it is unfavorable, and especially so in that class of cases caused by sexual excess or self abuse, where a cure depends on the success one has in prevailing on the patient to refrain from his injurous practices.

No rule can be laid down for treatment. Local measures, comprising hot sitz baths, poultices to the perinaeum, rectal irrigations with hot salt solutions, massage of the prostate, the introduction of sounds, irrigations of the urethra, instillations of cocaine or weak solutions of silver nitrate, will benefit many, but in some do positive harm and are contraindicated. Frequently the general health must be built up, errors of digestion corrected and the bowels regulated before any benefit can be expected. In such cases travel, change of occupation and life in the open air are beneficial.

Narcotics are sometimes necessary to control pain, but should be used with caution as the drug habit is quickly established in these cases. Bromides and like nerve sedatives are sometimes useful. For the relief of neuralgic pain I have found the high-frequency current to be of benefit.

The treatment must be suited to the individual case, and first one remedy will be found to do good and then another. Many patients are cured, but many others resist all treatment and their troubles continue for years, even for life.

I know of no class of cases calling for more patience on the part of the surgeon and more ingenuity in the combination of remedies than these neurasthenic hypochrondriacs whose entire attention is fixed on their prostates in one or the other of its spheres of action.

The following brief notes of a few cases will illustrate some of the difficulties that have to be met.

Case I.—E. B., 27, white, married three years, no children, no history of venereal disease. Complains of pain in right groin and in the lower right quadrant of abdomen and in glans penis. Prostate normal in size and consistency, generally sensitive. Prostatic urethra sensitive. No urethral discharge, but sensation of moisture. Urine contains a few fine filaments but is otherwise normal. Diagnosis, general hyperaesthesia of prostate. Cause, *coitus interruptus*. Hot baths and irrigations were ordered with the advice to cease, or change, his race-suicidal practices. Prompt relief of all symptoms followed and there has been no return in six months.

Case II.—E. H., 32, colored, married three months. Denies venereal disease. Complains of severe pain in left testicle and cord, occasionally in glans penis. Prostate, testicle and cord normal. Prostatic urethra very sensitive. A few filaments in urine, otherwise normal. Diagnosis, hyperaesthesia of the pro-

static urethra following *coitus interruptus*. Treatment same as in case 1, with addition of instillations of nitrate of silver. Symptoms all disappeared after two months.

CASE III.—E. P., 26, colored, single. Has pains in sacral region and down the thighs. Acknowledges self abuse. Various forms of treatment have been tried with temporary relief but sooner or later symptoms return.

CASE IV.—J. D., 34, white, married. In July, 1904, had intercourse with a mistress three to four times nightly for three weeks, at the same time drinking steadily. At the end of this carouse he found himself in another city and noticed a discharge from his penis accompanied with severe pains in left testicle and groin. Was treated two weeks for gonorrhoea. On his return he came under my observation. Finding no trace of the gonococcus after examining many slides from both himself and his friend, I came to the conclusion that he had had no gonorrhoea but a prostatitis from sexual excess. Under local treatment the neuralgic pains left him promptly and the discharge after a few weeks.

CASE V.—C. N., 55, white, married one month. Had been a widower for several years and a total abstainer for ten years. On a wedding journey he had partaken freely of wines and whiskey. On his return he was referred to me an account of a constant pain in the glans penis, so severe that sleep was much broken. Would not consent to rectal examination. Irrigations (rectal) of hot water and a bromide mixture were ordered and moderation in all forms of indulgence advised. The pains left promptly and there has been no return.

CASE VI.—J. B., 26, white, single, was referred to me on account of a small tumor just within the meatus, supposed to be a chancre, which was accompanied with a severe pain located by the patient in the tumor. Cocaine to the growth had given no relief. Tumor proved to be a sessile warty growth. Prostate was normal but urethra hyperaesthetic. Hot rectal irrigation gave prompt relief and there has been no return in the six months that have elapsed since treatment.

CASE VII.—F. D., 33, white, single, came to me in April, 1905. Had contracted a gonorrhoea a year before and discharge had never ceased, though for a long time there had been only a morning drop with a few filaments in the urine. Prostate was somewhat distended, mushy and tender. Prostatic urethra especially sensitive. Had found on trial that erections failed him when most desired, though occasionally they came during the night. Mental condition on account of this was most distressing as he thought he was barred from marrying. After a few months' local treatment the prostatic symptoms disappeared, and by a process of education his mental condition was cleared up. He was married in November last, and I saw no more of him till January of this year, when he returned on account of the reappear-

ance of the morning drop with some pain in left testicle and cord. From his answers to my questions I judged that his condition at this time was due to sexual excess.

CASE VIII.—J. F., 64, white, married, had an attack of cystitis in the seventies and has had difficulty in urinating ever since. Flow slow and painful in beginning. Interrupted two or three times during every urination, with long waits. Fifteen minutes generally required for the act. At times flow would come full and free for a moment and then dribble again. Two to four ounces of residual urine were always present. Urine contained pus, mucus and bladder epithelium. No casts. Prostate little if any enlarged, sensitive on pressure, mushy and the secretion expressed by massage full of pus. Cystoscope showed prostatic bar and the general picture of cystitis. Introduction of 150 cc. of fluid into the bladder caused pain. Two Bottini incisions were made on Jan. 31, and as a result the bladder capacity has doubled, the flow starts promptly and without pain, the stream is of good size and uninterrupted and the bladder is emptied. The prostatic secretion is much less and of better character. He still has to urinate two or three times during the night and the bladder walls are not yet normal. The urine is nearly clear, no longer has a foul odor and the sediment deposited on standing is mostly mucus. In this case I was for a time at a loss to understand the continued alkalinity of the urine in spite of measures taken to correct it. One day it came out in conversation that he was addicted to the use of a well advertised headache remedy, taking one or two doses every day. As soon as he omitted his daily dose the alkalinity ceased to trouble, but returned whenever he took the preparation.

CASE IX.—J.K., 44, white, married, one child twelve years old. Had gonorrhoea and syphilis before the age of twenty. Has had a "weak bladder" since childhood, wetting the bed nearly every night, sometimes twice in a night. Urinates during the day every two to three hours, but when the desire to urinate comes on it is imperative and generally his clothing is wet before he can unbutton. Has severe pains in the penis and in the rectum, the latter coming on in the night and preventing sleep. Is thin, exceedingly nervous, depressed in spirits, breaks into tears in telling of his sufferings and talks of suicide. Prostate slightly enlarged, mushy and yields a thick purulent discharge. Urethra normal in caliber, prostatic urethra hyperaesthetic. Urine normal except for a few filaments. Scrotum and contents normal.

Thus far we have a typical picture of prostatic trouble, and I must confess that I saw nothing else at first. After he had been under treatment two or three weeks he one day complained to me that his knees were weak. Recalling that he had a luetic history, I examined him more closely and found the right knee-jerk normal but the left wanting. (I have since been able to get a slight kick on left side.) He has Argyll Robertson pupils, chronic

constipation and sharp pains in the calves of his legs accompanied by spasmodic contractions of the muscles. These pains are worst at night but often come on during the day. He occasionally stumbles or staggers slightly when walking. He has had no erection for five years. These conditions are diagnostic of tabes, and it is evident that he has two coexisting diseases. It has been and still is a puzzle to decide to which disease some of his pains are due.

Local treatment was given at first and with apparent benefit. The prostatic secretion became nearly normal in character, and he had days when his clothing would keep dry. By having him wakened at three in the morning, and made to get up and urinate, the bed was kept dry many nights, but even after doing this the bed would sometimes be wet before morning. Hot applications to the perinaeum and hot irrigations of the rectum relieved the pains at times and at others failed. When he has come into the office suffering with pain, instillations of cocaine or alypin have given prompt relief. On some nights he sleeps well but on others only after using a suppository of opium and belladonna.

There is no evidence that the tabes has reached the ataxic stage unless his occasional unsteadinness of gait be taken as such. He is a mechanic, and works at his trade when his pains will permit.

Dr. Hagner said that Dr. King's subject was of great importance but of such magnitude that it could not be epitomized. In Dr. Hagner's opinion prostatic neuroses are of such frequency and are productive of so much mischief that they should receive more general recognition and should be more freely discussed in the text books of genito-urinarv surgery.

In every case of neurasthenia in men the prostate gland and its adnexa should receive as careful examination as the uterus and appendages receive in the same condition in women. A large proportion of neurasthenic men have some form of prostatic disease, and he has seen most marked benefit of the general neurasthenic condition result from appropriate treatment of the gland. Where a neurosis is accompanied by a decided prostatic defect, the prognosis is better than where upon examination only a little tenderness may be demonstrated. Another group of cases, in which inability to control urination is a prominent symptom but in which little organic change may be demonstrated in the prostate, presents an unfavorable prognosis.

Sexual neurasthenia is a condition most productive of concern to the patient, and it will be found that the great majority of these patients have prostatic trouble. Gonorrheal prostatitis is apt to reappear from sexual excesses, and it will be found that nearly all cases of recurrent prostatitis give the history of gonorrhea.

He had had several cases of pain in the glans penis due to posterior urethritis in the prostatic portion.

There can be no hard and fast rule for treatment in these neurotic cases. Each patient must be studied separately and needs a different method of treatment.

Dr. Bishop said that the cases described by Dr. King brought back to mind a book on sexual neurasthenia, written 25 years ago by Dr. Geo. M. Beard. This book outlines many of the symptoms spoken of by Dr. King.

Dr. Bishop's own practice is to examine the prostates of all neurasthenic men, but in addition to prostatic disease he often finds that the fault lies in a hyperesthetic urethra due to organic stricture.

He has had much success in the treatment of such cases with the use of wave electricity ; one electrode is placed in the rectum and the current used has a frequently repeated wide wave. The method has a very sedative effect and relieves congestion. He called attention to chronic constipation as a cause of prostatic neuroses, and congratulated Dr. King upon his paper.

Dr. Nichols suggested that some cases apparently of prostatic neurosis might be due to organic spinal cord lesion, and cited a case of multiple sclerosis in which there was an intention tremor of the muscles of urination producing intermittent micturition. This tremor was, of course, similar to the tremors in other voluntary movements.

Dr. King, in closing, said that he was aware that his last two cases did not belong accurately in the neurotic class. In the patient upon whom a Bottini operation had been done, however, the sudden interruption of urination in the midst of a full flow was diagnostic of neurosis.

He thanked the gentlemen for their kind comments.

CYSTINURIA WITH FORMATION OF CALCULI; REPORT OF A CASE.*

By H. A. FOWLER, M. D.,

Washington, D. C.

Cystin is one of the most interesting substances that enter into the composition of the rarer forms of urinary calculi. It occurs in the urine only under conditions which are essentially pathological, and hence such cases are extremely rare. The chief practical interest which attaches to these cases is the tendency they exhibit to the formation of calculi. But, during the past five

* Read before the Society, February 28, 1906.

years particularly, the cystin question has aroused a great deal of interest, and considerable work has been done on the chemistry of this substance in an effort to determine its composition, the method of its formation, and the conditions under which it appears in the urine. I have thought, therefore, that it might be of interest to bring this subject before the Society in connection with a case which I now have under observation, to give a brief review of what has been learned from the relatively small number of cases recorded, and to sum up concisely the present state of our knowledge concerning this rare and interesting condition.

Cystin, or cystic oxide, as it was first called, was discovered by Wollaston in a vesical calculus removed from a boy five years old. He observed another specimen removed from a man forty-six years of age. His paper "On Cystic Oxide, a New Form of Urinary Calculus" was published in the *Philosophical Transactions*, London, for 1810. The following brief extract from this paper is of interest: "From the ready disposition of this substance to unite with both acids and alkalis it would appear to be an oxide, and that it does in fact contain oxygen is proved by the formation of carbonic acid in distillation. The quantity of oxygen in the calculus is, however, not sufficient to give it acid properties, for it has no effect on paper colored with litmus. I am, therefore, inclined to consider it an oxide; and since both the calculi that have yet been observed have been taken from the bladder, it may be convenient to give it the name of *cystic oxide*, which will serve to distinguish it from other calculi, and as this is unlike any other term at present employed in chemistry, it is to be hoped that it will not be thought to require alteration."

It may be noted here that the name *cystic oxide* was changed to *cystin* by Berzelius, because this substance was found not to be an oxide.

Since the discovery of cystin, nearly one hundred years ago, scarcely more than 115 cases of cystinuria have been recorded. When we consider the number of urine examinations made during a year in any one large hospital, and the infrequency with which cystin is found in the urine, the rarity of this condition is apparent.

The history of our case is as follows:

W. B. E., white, a minister, aged 67, was first seen April 27, 1905. He complained of frequent and painful urination. The family

history, which was carefully inquired into, was negative. The patient was never a robust man. He has suffered with what he calls chronic malaria for thirty years. He had typhoid fever at the age of seventeen. He suffered with attacks of severe headache, which began when he was about twenty years of age, and continued until he was forty-five. He was married at twenty-seven, and is the father of eight children; six are living and well, and two died. There is no history of rheumatism, tuberculosis, or digestive trouble. Average weight 125 pounds.

Previous to one year ago he never suffered from any urinary disturbance. About that time he first noticed a slight increase in frequency, associated with precipitancy. Six months ago he began to have sharp pains at the end of micturition. There has never been any sudden stoppage of the stream, although for months it has been intermittent, especially toward the end of the act, and accompanied by considerable tenesmus. He has never had complete retention of urine, never passed a stone, and never noticed blood in the urine, although a microscopic examination of the urine some time ago showed a small amount of blood.

Status Praesens.—The patient voids once or twice at night, and six to eight times during the day. He suffers from precipitancy, and has severe cutting pain in the glans penis towards the end of micturition. He is a small man, pale, and not robust, although well preserved for his age. The mucous membranes are of fairly good color. Examination of the chest and abdomen is negative. The *urine* is slightly cloudy, acid; albumin is present in small amount; sugar is absent; the urea is 13 grams per liter (Doremus ureometer). The microscope shows numerous red blood cells and a few leucocytes. No bacteria are seen. Rectal examination shows a slightly hypertrophied prostate. The bladder is difficult to reach above the prostate. With the cystoscope a single large oval calculus with a coarsely granular surface is seen lying on the right side of the trigone, and covering the orifice of the right ureter. There is a slight intravesical enlargement of both lateral lobes of the prostate. The median bar is not greatly enlarged. There is a residual urine of 15 cc.

A perineal prostatectomy was performed May 22, 1905, by Dr. Young. After enucleating a small enlargement of the lateral lobe on each side, the urethra was split along the left lateral wall, and the tractor removed. The neck of the bladder was then di-

lated, and the calculus removed through this opening. Recovery was uneventful. The fistula closed on the eighteenth day, and the patient left the hospital on the twenty-third day. At this time the urine was slightly cloudy, acid, sp. gr. 1015. Albumin was present in small amount. The microscope showed pus cells and bacteria.

On July 5, 1905, the following report was received: "Yesterday while urinating, the enclosed small piece of gravel passed into the urethra, but stopped when about two-thirds of the way from the bladder. By pressing the urethra behind it I gradually pushed it out without pain or blood."

The vesical calculus removed by operation, together with the small one passed spontaneously, was referred to me for examination. The larger specimen is oval in shape and measures 3.1 x 2.2 x 1.5 cm. It is light amber in color and has not undergone any change on exposure to light. The surface is glistening and remarkably rough and granular. Examined with a magnifying glass, no definite cystalline structure can be made out. The appearance is that of numerous irregularly rounded minute masses of a light amber, semi-translucent substance, with a smooth surface which reflects light strongly, adhering without any definite arrangement or suggestion of definite cystalline structure. The specimen weighs *97* grains.

The calculus is hard, and while its texture is much less compact than that of uric acid calculi, it is nearly as difficult to saw through as the latter. The cut surface presents no lamellar arrangement so characteristic of uric acid, calcium oxalate, and phosphatic stones, but the material is arranged in more or less distinct radiating columns, separated by narrow, irregular spaces, which give to the cut surface the appearance of an indistinct radial striation. There is no definite nucleus, although the center of the calculus is more compact than the outer zone. The color of the cut surface is the same as that of the outer surface. The color of the powder obtained by sawing through the calculus is white, and furnished the material for the following tests.

A small portion of the powder heated on platinum foil burned completely, and emitted a pungent, disagreeable odor, SO_2. Another portion gave negative results with the murexid test. The test for xanthin was likewise negative. It was evident, therefore, from these tests and its physical character that the calculus was

composed of pure cystin. A small portion of the powder was then placed on a slide, and a few drops of ammonium hydrate added; the substance dissolved completely. The slide was then placed under the microscope, and watched as evaporation took place. The formation of numerous homogeneous transparent hexagonal plates was observed, the characteristic form of cystin crystals obtained from urinary calculi. The greater number of these crystals presented regular sides and angles, but considerable variation in size was noticeable. In a small number the sides of the hexagon were unequal in length, and an irregular crystal resulted.

The formation of these crystals as observed under the microscope was interesting. After standing for some minutes, numerous fine linear particles were seen floating in the solution. As these neared the edge of the drop they were strongly attracted (by surface tension), and moved with increasing rapidity toward the edge, where evaporation was rapid. Here they united into irregularly rounded, opaque masses. In a short time the outer zone of one of these masses cleared up, and presented a clear cut, hexagonal outline. At this time only a narrow outer zone was transparent, the greater portion of the crystal being still opaque. Gradually this clearing process extended from the circumference toward the center, until finally the whole crystal become transparent and homogeneous.

From a solution in ammonium hydrate the cystin was precipitated by acetic acid, upon standing several days, in the form of hexagonal plates. The crystals obtained in this way showed a marked tendency to cluster in groups, several crystals lying superimposed, and thus rendering the cluster more or less opaque, and the outlines of the individual crystals difficult to trace.

A small portion of the original powder, boiled with potassium hydrate in the presence of lead acetate, turned the solution black, due to the formation of lead sulphide.

The complete combustion of the powder on platinum foil shows the absence of any inorganic material. No tyrosin is present in the calculus.

The smaller calculus, passed spontaneously one and one-half months after the removal of the larger, is roughly triangular in shape, of the same color, with a smooth surface, except for a patchy deposit of phosphates. This specimen weighs three

grains. It is also composed of pure cystin, with a thin, rough, irregular deposit of calcium phosphate on the surface. Neither calculus has undergone any change in color on exposure to the air.

At the time the patient was in the hospital the nature of the material composing the calculus was not suspected, and hence an examination of the urine for cystin was not made. When the unusual character of the condition was recognized, I was interested to know whether or not this substance could be recovered from the urine. The patient reported at my office December 22, 1905, seven and one-half months after the operation. A fresh specimen of urine examined immediately showed the following: light amber in color, acid, sp. gr. 1014, albumin present as a slight trace; no sediment. A centrifugalized specimen under the microscope showed a few typical hexagonal crystals of cystin which were seen in several slides. There were no casts, pus, blood, nor organisms present. This specimen was allowed to stand in a conical glass covered with cotton. It gradually became turbid and alkaline, and in forty-eight hours a strong odor of hydrogen sulphide was noticeable. In the sediment from a twenty-four hour specimen preserved with a few cc. of chloroform, numerous hexagonal plates of cystin were seen.

Another fresh specimen was obtained two weeks later, which presented the same characters as noted above. Previous to this visit the patient had been taking liquor potassae for eczema, with which he has suffered at intervals for years. At this time no cystin crystals could be found in the urine, even after repeated and prolonged search. The urine was then divided into three equal portions, glacial acetic acid was added to the first and second, and the three set aside. Specimen number three became turbid, alkaline, and in three days gave off a strong odor of hydrogen sulphide. Specimens one and two remained perfectly clear. The first was examined microscopically at intervals of one or two days for cystin crystals. These were found for the first time on the eleventh day. They were also detected in specimen number two at the same time.

I was able to obtain specimens of urine from two sons, aged thirty and thirty-five respectively. The examination of these for cystin was negative.

At the present time the patient's general condition is very good.

He has what he calls "dumb chills" in the early part of the day, which he thinks is due to "chronic malaria", and from which he has suffered for thirty years. He describes these "chills" as a feeling of fatigue, both physical and mental. In the latter part of the day this feeling wears off, and he feels quite normal. There is no urinary disturbance, despite the fact that cystin is present in the urine.

The following points are of particular interest in the case here reported.

1. The patient is sixty-seven years old. Cystinuria is extremely rare in patients over fifty.

2. The cystinuria has persisted after the removal of the calculi.

3. The only symptoms associated with the presence of cystin in the urine were those arising from the formation of the calculus, and hence were the result of mechanical irritation.

4. There is no family or personal history of tuberculosis or rheumatism. Our patient is well preserved for his age, and appears not to have suffered with digestive trouble beyond the common lot.

5. Cystin is present in the urine in crystalline form in very small amount, and hence is easily overlooked, unless careful search for it is made. As in the case reported by Thorndike, the condition in our patient would have been missed altogether, had it not been for a chemical examination of the calculus, which led to the detection of cystin in the urine.

It is quite probable that the number of cases of cystinuria is greater than the statistics indicate, since the cystin may be present in solution or in such small amount as to give rise to no symptoms pointing to it. In the vast majority of cases where it has been found its detection has been due to some complication, as in our case, or it has been present in crystalline form in such large amount as to make its detection easy.

It is impossible to say how long the condition has persisted in our case, but in all probability it has not developed recently. In the vast majority of the cases recorded, the cystinuria had persisted for years. Thus, in one of Civial's cases, the patient had suffered from renal colic, and expelled a calculus fourteen years before he presented himself. Another patient passed cystin calculi at intervals for thirty years. The case referred to by

Woods in his discussion of Thorndike's and Ogden's paper is interesting, and probably unique as regards the manner in which attention was called to his condition. The patient, a roofer, suffered from colic, which he was in the habit of relieving by bending over the back of a chair. One day while he was urinating from one roof to another below, a companion on the lower roof asked him why he was throwing down those pebbles. Picking up some of these, they proved to be pure cystin concretions about the size of a pea. Woods had a phial full of these, which had been given to him by this patient, and were all pure cystin.

Cystinuria often begins in early life (12.7 per cent. in 63 cases where the age was recorded), and there is a marked tendency to occur in families (26.1 per cent.). Cohn reports the greatest number of cases in one family, in which the mother and six children were affected. The case of family cystinuria reported by Abderhalden is even more remarkable, in that not only was the hereditary factor most pronounced, but is the first case of congenital cystinuria recorded, and the first in which cystin was found widely distributed throughout the internal organs. This report is briefly as follows: Prof. Kaufmann of Basle, in an autopsy on a male child two and one-half months old, who died from what appeared to be gradual inanition, found the internal organs in part studded with numerous white points visible to the naked eye, and in part infiltrated with microscopic compact masses (*e. g.*, the liver) which under the miscrosope appeared either as rounded or angular tablets. Kaufmann demonstrated this case as a unique form of cystin diathesis, such an infiltration of the internal organs with cystin never having been observed or, at least, described. A piece of the spleen was given to Abderhalden for chemical examination. The infiltration of this organ was so pronounced that on section it appeared to be beset throughout with compact, cloudy, white masses. The crystals were easily dissolved from the tissue by ammonium hydrate, and gave beautiful hexagonal plates on diluting the solution. Other chemical tests confirmed the microscopical findings.

In this same family two children died in the same manner; one, a girl, at the age of nine and one-half months; the other, a boy, at 17 months of age. Two children, both boys, are still living, and both have cystinuria. 500 cc. of urine from the oldest, aged 5½ years, gave 0.229 grams of cystin; 500 cc. of urine from the

other boy, aged fourteen months, yielded 0.11 grams of cystin. The father, aged 34 years, also had cystinuria, and from 500 cc. of his urine 0.046 grams of cystin were obtained. An examination of the mother was negative. The grandfather (male line), 64 years old, also was affected, but a much smaller amount of cystin was present, 0.07 grams in 500 cc. Examination of the grandmother (male line) was negative. Diamines were absent in all, although search for them was made.

In the male line there was a history of tuberculosis. The father and children suffer from a lung affection and digestive disturbance. The grandfather suffered for years with digestive trouble. In the maternal line there is a repeated history of tuberculosis. Blood relation was not present.

With the exception of Abderhalden's case, cystin has been found in man once only outside the gentio-urinary tract, namely, by Scherer, in 1858, in the liver of a patient dead of typhus fever. It has been found only twice outside the human body: by Cloëtta, in the kidney of an ox, and by Drechsel in the liver of a horse.

Cases of transient cystinuria have been reported by Ebstein, Warburg, and others.

To sum up briefly, then, we may say from a study of the cases recorded that cystinuria is a very rare condition; that it appears in early life, but is rare in persons over fifty; that at least one case of congenital cystinuria has been recorded; that the condition usually persists for a long time, though it may be intermittent and transient; that there is a marked tendency to appear in famlies; and that in the majority of cases the nutrition of the patients is below normal. The chief complication is the formation of urinary calculi.

Now the following questions naturally suggest themselves: What is cystin? What is its source? and How is it formed? Under what conditions does it appear in the urine?

The first complete analysis of cystin was made by Thaulow, who represented its molecular composition by the formula $C_6H_{12}S_2N_2O_4$. Although different results were obtained by others, for example by Gmelin, and by Dewar and Gamgee, later analyses, particularly by Külz and by Baumann, substantiated the work of Thaulow.

It was found that the amount of sulphur in cystin is relatively high, about 26 per cent. It was early apparent from its high

sulphur content that cystin had its origin in the decomposition of albuminous material, and the question then arose, how is it formed? Is it one of the products formed during the normal proteid metabolism? Or does it appear only under pathological conditions? It seemed more probable that the former was true, and that, therefore, the appearance of cystin in the urine was due to some metabolic anomaly in which one of the intermediate products of normal proteid metabolism failed to undergo further decomposition, and was excreted in the urine. This condition was, therefore, considered in the category with gout and diabetes. This was the earliest view as to the formation of the substance, and it was supported by the observations of Baumann and Preusse, and by Jaffe, who found in the urine of dogs fed on halogen beuzoyl compounds, *e.g.*, beuzoyl bromide, a substance "Merkaptursäure," which they considered to be a substitution product of cystin.

Marowsky found the cystinuria associated with acholia in his case. He looked upon the cystinuria as a vicarious elimination of taurin. But this view was not supported by other observers, and this case stands alone in the literature. Furthermore, recent work has shown that if these substances are related at all, it is more probable that the cystin is converted into taurin and eliminated in the form of taurocholic acid.

The theory that cystinuria was the result of defective metabolism was held up to the time of the discovery by Baumann and Urdränsky of certain diamines, cadaverin and putrescin, in the urine and feces of cystinuric patients. These substances, tetramethylenediamine (putrescin) and pentamethylenediamine (cadaverin), were supposed to be formed in the intestine only during the putrefaction of albuminous material. The appearance of cystin in the urine was explained somewhat as follows: The diamines, formed in the intestine, during the putrefactive processes of albuminous material were absorbed and passed into the general circulation. Somewhere in the body these united with cystin, and the substance thus formed was excreted by the kidneys. But in the presence of acid urine the combination was again broken up, and the insoluble cystin was deposited.

Now, to explain the process of purifaction upon which the formation of the diamines was supposed to depend, Brieger proposed the theory of a specific microbic infection of the intestine. With the presence of this specific infection the series

of changes was started which resulted in the appearance of cystin in the urine. Brieger's theory gained wide acceptance, and is the one most generally encountered in the literature.

It is to be noted, however, (1) that the association of diaminuria and cystinuria upon which this theory was based was found only in a very limited number of cases, not more than three or four. The assumption was made from this small number of observations that diaminuria was *always* associated in a causative way with cystinuria; (2) that the idea of a specific intestinal infection was not derived from any bacteriological investigation, but was suggested as offering the only or at least the simplest explanation for the origin of the diamines. It is to be borne in mind, further, that the material for the study of cystin and its formation was limited to those rare cases of cystinuria and cystin calculi.

The objection was early made to this theory of Brieger's that in the cases recorded where the cystinuria had persisted for long periods, *e.g.*, for twenty and thirty years, it was difficult to conceive a specific infectious process persisting in the intestine for that length of time and giving rise to no other manifestations. It was later shown in numerous cases of cystinuria by careful observers that the diamines were not present, and hence one of the strongest supports to the infection theory was removed.

Previous to this, however, Moreigne, in 1899, offered several serious objections to Brieger's theory, although at that time he believed the diamines always accompanied the cystinuria. In this communication Moreigne pointed out that this condition must be considered as due to a special state of the organism, in which the nutrition is disturbed, that is, there is a diminution of the metabolic activity and a partial arrest of oxidation. The cystin in the urine is simply the easily recognized and hence important indication of this defective (incomplete) metabolism.

He insisted that cystin must be looked upon as a product of albuminous origin, arising within the organism through incomplete oxidation, and that there is no relation of cause and effect between the diaminuria and the cystinuria, the two phenomena being independent.

Hence the effect of Moreigne's work was to bring again into prominence the earlier view, namely, that cystinuria is to be looked upon as a metabolic anomaly, and, in that sense, is to be classed with diabetes and gout.

In the following year, 1900, Simon reported his case, in which he was able to demonstrate the association of diaminuria and cystinuria. He argued for the interorganic origin of cystin with the diamines, and suggested how these substances could arise from proteid decomposition, if the oxidation processes which take place in tissues rich in sulphur are impeded. Simon laid particular stress on the association of the diamines with the cystin, and believed this relation was constant.

These results not only speak strongly against the infectious theory of Brieger, but they support the view of Moreigne, that diaminuria and cystinuria are independent conditions, and this view has received additional support from the most recent investigations.

The most important advance in the chemistry of this interesting and, from the standpoint of physiological chemistry, important substance since the work of Baumann, was made by Mörner of Copenhagen. Earlier workers had conjectured that the sulphur of the albumin molecule was held in an atom group corresponding to cystin, but all attempts to obtain cystin directly from albuminous substances were without success. Thus, Suter, one of Baumann's pupils, attempted to obtain cystin from albumin by hydrolytic decomposition, but with negative results, and he concluded that cystin did not exist preformed in albumin, but that another substance, asparagin, was the mother substance of cystin.

In a few instances cystin had been obtained accidentally from proteid material, *e. g.*, by Külz, in the pancreatic digestion of fibrin, and by Emmerling, from keratin. But to Mörner belongs the distinction of having been the first to obtain cystin regularly by the hydrolytic decomposition of a great variety of albuminous substances. He showed, for example, how cystin might be obtained easily and in relatively large amounts from keratins, using such material as the hoofs and horns of animals, human hair, horses' hair, etc. As a result of Mörner's achievement, the cystin question again gained prominence, and the way was opened up for further investigations, since the material for such work is always at hand.

Important contributions to the chemistry of cystin have since been made by Friedmann, Neuberg and Mayer, Erlenmeyer, Jr., Patten and Mörner.

While these are of interest chiefly to the physiological chemist, and are too technical to be reviewed here in detail, there are one or two points of considerable interest to which a brief reference may be made.

Mörner in his earlier experiments found that there are two kinds of cystin obtained from keratin substances; (1) cystin which crystallizes in the well known hexagonal plates, and, like the ordinary cystin, is strongly laevo-rotatory toward polarized light; and (2) cystin which crystallizes in the form of needles or narrow leaves, and is either inactive or dextro-rotatory toward polarized light. Both forms give the characteristic reactions for cystin, and may be considered isomeric forms.

Later Neuberg and Mayer stated as a result of their experiments that one must distinguish two forms of cystin, one of which is contained in cystin calculi, and the other in the body albumins. These two forms differ chemically only in their internal molecular arrangement.

In 1903 Erlenmeyer, Jr., prepared cystin synthetically. Up to that time the synthesis of this substance had not been accomplished.

Friedmann, in Hofmeister's laboratory, made the following interesting and suggestive observation: by the oxidation of cystin with bromine he obtained a sulpho-acid, "cystein acid", as he called it, which he was able to convert into taurin by heating with water in a closed tube at a temperature of 235. The conversion of cystin into taurin in such large amounts, fully 50 per cent., is highly suggestive. The conjecture seems highly probable that in the animal organism cystin is converted into taurin and excreted in the form of taurocholic acid. But just how this transformation takes place within the body is not clear.

In conclusion we may state briefly the view generally accepted at the present time as to the nature of cystin, its mode of operations, and the significance of its appearance in the urine. Cystin is to be considered as a product of the decomposition of albuminous material, and is relatively rich in sulphur.

It is evidently formed in the body during the process of normal proteid metabolism, and is immediately oxidized to lower and simpler compounds, and hence is not found normally in any of the excretions. Under certain conditions, which are not well understood, normal metabolism is interfered with, oxidation

processes are arrested, and the cystin formed under these circumstances fails to undergo further change, and is excreted as such by the kidneys.

Cystinuria or the presence of cystin in the urine is, therefore, to be looked upon as an indication of defective proteid metabolism, and the treatment of the condition directed accordingly. It is not known in what part of the body cystin is formed, but the suggestion was made long ago that that overworked organ, the liver, is responsible. We have seen that the recent work of Friedmann lends some support to this view. It remains, however, for further clinical and experimental work to solve this question.

Dr. Hagner said that he had never encountered a case of cystinuria, and, therefore, his remarks must be brief. He wished to call attention to the apparent evidence in the literature of a family predisposition to cystinuria: Poland reporting 22 cases of the affection, found 10 of them in 2 families, and Marceaux reports the cases of two brothers, both of whom died of cystin calculi. He congratulated Dr. Fowler upon his contribution, and said that the immense amount of work required in the preparation of such a paper was not generally appreciated. He inquired if any change in the color of cystin calculi occurs on exposure to light; he had gained the impression that they become darker.

Dr. Isabel Haslup-Lamb inquired if the cystinuria patients present other evidences of faulty metabolism. Do they suffer from asthma, dropsy, etc., and are the women predisposed to eclampsia.

Dr. A. F. A. King joined in congratulating Dr. Fowler upon his complete and scientific paper.

Dr. Reyburn congratulated Dr. Fowler and said that cystinuria must be a very rare affection. In his long experience he has seen only one case: a man, in fair general health, presented a specimen of urine for routine examination. An abundant deposit of cystin crystals was to be seen. The cystin was not found again, and nothing further unusual could be detected in the patient's condition.

Dr. Fowler in closing the discussion said that his specimens had not changed color, but that the statement is made that in a number of instances the color of cystin calculi has become slightly greenish upon exposure to the air.

To Dr. Lamb he replied that he had not studied the complete clinical histories of the cystinuria patients in the literature for evidence of other metabolic errors, but that a complete resumé of the subject has been made by Syme, of Baltimore. One case in the literature, however, had had marked multiple arthritis, simulating rheumatism.

CASE OF ADENOCARCINOMA OF LACRIMAL GLAND.*

By E. OLIVER BELT, M. D.,

Washington, D. C.

Dr. Belt reported the case on account of the rarity of the disease affecting the lacrimal gland : A mulatto woman, 28 years of age, consulted him in December, 1904. She had had a swelling of 15 years' duration upon the mesial side of the right orbital fossa. It had given her no inconvenience beyond a decided and disfiguring exophthalmos. Upon inspection the eye was seen to protrude inward and downward. The swelling was produced by an enlarged lacrimal gland, and he advised that the gland be removed. The patient declined operation, making the statement that an attempt had been made in New Orleans to remove the tumor, but the operation had been abandoned because of dangerous symptoms produced by the chloroform.

The tumor later became very painful and gave so much trouble that recently, at the Episcopal Hospital, he removed the specimen exhibited. Under chloroform anesthesia, he made an incision through the brow to avoid a scar. This incision has the disadvantage of incurring the danger of causing ptosis by injury of the levator palpebrae superioris muscle. Another method of approaching the gland is to split the canthus. The mass was found adherent to the bone and extended to the apex of the orbit. The extent and adhesion of the tumor made the operation very difficult, but he succeeded in enucleating it. The globe was replaced and the exophthalmos almost completely disappeared under compress dressings. After the operation the vision improved from $\frac{20}{50}$ to $\frac{20}{30}$; the levator muscle was uninjured and no ptosis resulted.

Dr. R. S. Lamb said that he was much interested in the case Dr. Belt had presented because the vision improved after removal of the tumor, which was large enough to occupy half the orbit, thereby causing the marked exophthalmos and undoubtedly some stretching of the nerve fibers.

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*Reported with specimen to the Society, March 28, 1906.

As to the diagnosis, there are several reasons why this tumor is probably an endothelioma and not an adenocarcinoma.

1st, the patient's age; 2d, the long duration of the growth; 3d, the encapsulation and apparent non-malignancy; 4th, that it is a mixed growth; 5th, that most tumors of the lacrimal gland as reported by various observers have had a mesoblastic origin.

The lacrimal is neither acinous nor tubulo-acinous, but tubular, a serous gland identical in structure with and only differing in function from the salivary glands. Tumors of both are similar and sometimes occur simultaneously.

Alt reported 7 tumors of the lacrimal gland, 5 of which were mesoblastic. And Warthen in 1901 collected all cases reported up to that time, numbering 132, out of which over two-thirds were of mesoblastic origin. Koster proved that some lacrimal gland growths undoubtedly, and most of them probably, took origin from the endothelium lining the lymph spaces, which, becoming metaplastic, developed into cartilage or other connective tissue formation, or degenerated into hyaline or myxomatous tissue. Furthermore this is probably an endothelioma because it corresponds to the description of serous gland endotheliomata which occur usually in early adult life, are of slow growth, painless, rarely malignant, and seldom recur, and give most trouble through pressure upon contiguous structures.

Dr. Belt, in closing, said that because of the extreme rarity of malignant neoplasms of the lacrimal gland he naturally supposed the growth to be benign. Dr. Nichols had examined the specimen, however, and found that it was adenocarcinoma. Perhaps the carcinomatous character developed after the attempt to remove the gland in New Orleans.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 21, 1906.—Dr. J. Dudley Morgan, President, in the chair.

The regular order of business was suspended, and Mr. Charles Truax, of Chicago, delivered an illustrated lecture on the Yellowstone Park. Many members of the Society and guests were present. A vote of thanks was given Mr. Truax for his entertainment.

Wednesday, February 28.—Dr. Morgan, President, in the chair; about 55 members present.

Dr. Motter read a report on the progress of efforts to secure the passage of a Pharmacy Law, and directed attention to the strong opposition to it from the pharmacists. The members of the Society were urged to use every influence within reach upon Representatives and Senators to render them favorable to the bill.

Dr. H. A. Fowler read the paper for the evening. Subject, "Cystinuria." Discussed by Drs. Hagner, I. H. Lamb, E. F. King, A. F. A. King and Reyburn. See page 109.

Wednesday March 7.—Dr. Morgan, President, in the chair; about 85 members present.

The following were elected members by invitation: Med. Direct. John C. Wise, Med. Inspect. P. A. Lovering, Surgeons T. A. Berryhill, J. D. Gatewood and W. C. Braisted, and Passed Assistant Surgeons A. W. Balch, E. M. Brown and Pryor, U. S. Navy.

Dr. Sowers, Chairman of the Executive Committee, read a report supplementary to the report of the Committee of February 7.

Dr. Hickling, for the Committee, stated that the Executive Committee desired the endorsement of the following recommendations:

1st. Compulsory registration of consumption.

2d. Free examination of sputum.

3d. The appointment by the Society of a committee of three to confer and cooperate with the Committee on Prevention of Consumption, for the purpose of formulating a bill providing for the measures named in the first two clauses, which bill should be satisfactory to the Society.

After animated discussion, the question being on Dr. Hickling's motion to adopt the resolution of the Executive Committee as contained in the second recommendation of the Executive Committee's report of Feb. 7, the motion was carried, and the resolution was adopted.

Wednesday, March 14.—Dr. Morgan, President, in the chair; over 60 members present.

The regular order of business was omitted, and the Society was addressed by Dr. Robt. Abbe, of New York, upon "Radium Results in Surgery." He exhibited specimens of radium, and

many casts showing the effects produced by its use in his hands upon different varieties of neoplasms, both malignant and benign.

A vote of thanks was given Dr. Abbe for his address, and the Society adjourned to Rauscher's, where a smoker, complimentary to Dr. Abbe, was given.

Wednesday, March 21.—Dr. Morgan, President, in the chair; about 80 members present.

The Chair announced the appointment of Drs. J. B. Nichols, Sterling Ruffin and J. D. Thomas, a committee to prepare a bill for the prevention of Tuberculosis. Dr. Nichols, Chairman of the Committee, read a report, and submitted two alternative drafts of bills, styled "A" and "B," for action of the Society.

The Society adopted Bill "B."

Wednesday, March 28.—Dr. Morgan, President, in the chair; about 70 members present.

The special committee composed of Drs. Nichols, Ruffin and J. D. Thomas was instructed to represent the Society before Congress in the interests of "Bill B," approved by the Society, March 21.

The Society adopted a resolution, in compliment to Dr. Louis Mackall upon his 75th birthday, and a committee consisting of Drs. S. S. Adams, D. S. Lamb and G. Wythe Cook, was appointed to arrange for some formal action by the Society in compliment to Dr. Mackall.

Dr. Sowers, Chairman of the Executive Committee, read a report upon current pending legislation, with recommendations, and the Executive Committee was authorized to proceed as recommended.

The Corresponding Secretary was directed to place upon the weekly postal cards notice of any important action proposed by the Executive Committee, whenever requested to do so by that committee.

Dr. Belt reported a case of adeno-carcinoma of the lacrimal gland, and exhibited the specimen. Discussed by Dr. R. S. Lamb. See page 123.

Dr. D. S. Lamb showed a specimen of a two-headed tortoise; technically a dicephalus dibrachius.

Dr. Fremont-Smith read the paper for the evening. Subject,

"Pyelonephritis." Discussed by Drs. Hagner, S. S. Adams, Hooe, Abbe, Taber Johnson, Compton and Brown Miller.

Wednesday April 4.—Dr. Morgan, President, in the chair; about 60 members present.

The following candidates were elected to active membership:

Roy D. Adams, Georgetown University, 1904;

Seneca B. Bain, National University, 1899;

George W. Boyd, College Physcians and Surgeons, Baltimore, 1895;

John Dunlop, Johns Hopkins, 1902;

Arthur C. Fitch, George Washington University, 1903;

Homer C. Fuller, George Washington University, 1904;

J. Walter Hodges, Baltimore Medical College, 1892;

Sothoron Key, George Washington University, 1899;

Louis C. Lehr, Johns Hopkins, 1902;

Richard M. Little, George Washington University, 1902;

Thomas P. Lowe, Georgetown University, 1902;

E. P. Magruder, George Washington University, 1902;

Samuel L. Owens, Georgetown University, 1903;

George M. Ruffin, George Washington University, 1902;

Robert C. Ruedy, George Washington University, 1904;

J. Lawn Thompson, George Washington University, 1904;

George Tully Vaughan, University of Virginia, 1879.

Bill "B" was referred to the Executive Committee, with instructions to urge its enactment by Congress; and the Special Committee was empowered to act with the Executive Committee in presenting the bill.

Dr. E. F. King read the paper for the evening. Subject: "Prostatic Neuroses." Discussed by Drs. Hagner and Bishop. See page 101.

WASHINGTON MEDICAL ANNALS.

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Editorial.

HISTORY OF THE SOCIETY. A WORD TO THE MEMBERS.

The Committee on "History" has prepared in duplicate a card catalog of the members, past and present, numbering now over 800, of whom more than half are dead or have removed from this District.

Each card sets forth for the individual member, so far as the information is at hand, the following facts:

1. The date of election to membership. [This is obtained by the Committee.]

2. The name of the member, in full; as for instance "John Paul Jones."

3. The date and place of birth—year, month, day; and country or State; and county or city; as Oct. 15, 1864, Cincinnati, Ohio; or Prince George Co., Md., or Berlin, Prussia.

4. The year and college when and from which graduated in Medicine; as M.D., 1875, Jefferson.

5. Other degrees; as A. B., 1865, A. M., 1870, Univ. Md.

6. Official positions in U. S., C. S., or other army or navy; or in Marine Hospital Service; Medical Cadet, Hospital Steward, Asst. Surg., Act. Asst. Surg; 1st Lieut., Capt., etc.

7. If separated from the Society, the date and manner of separation; as Resigned Jan. 8, 1866; Died June 10, 1876; Dropped Jan. 8, 1888; Removed to New York May, 1894.

8. Where a biographical sketch has been published, the date and manner of publication; as *Who's Who in America*, 1903–5; *American Men of Science*, 1906.

The above will cover about as much as space will probably permit to be published. It is possible, however, that when all the material for the history is prepared, the way may be clear to enlarge the scope of individual sketches. It would be well, therefore, for each member to prepare such sketch as would be satisfactory to him, for the Committee to use if opportunity should offer.

Official positions in the Society will appear in chronological lists.

Of course it is desirable that the sketches of members be correct, and the only assurance of correctness is in each member sending to the Committee the necessary information under the above indicated heads, in regard to himself. Failure to do this compels the Committee to depend on such information as they may obtain elsewhere; and inasmuch as the inquiry thus far has shown many contradictions and other errors, it is plain that if members fail to attend to this matter themselves, it is very likely that errors will appear. The Committee has found in some cases, the same individual recorded as having been born at different times or in different places; or has graduated in different years, or from different institutions, where further inquiry, usually made to the individual himself, has shown that one of the two statements was incorrect. About one in ten of the members has thus far replied to the request of the Committee for information. It is not right that the Committee should be compelled to seek elsewhere for information.

The Committee consists of Drs. A. F. A. King, D. S. Lamb, C. W. Franzoni, G. W. Cook and R. T. Holden.

With regard to members who have died or have otherwise separated from the Society an effort is made in each case, in one way or another, to complete their records, following up such clues as are obtained. Although many times disappointing, this line of inquiry has its interest. For instance, we have a member, Dr. Henry J. Crosson; the same name appears on the records of 1850 of another member, who seems to have left the city and nothing more is known of him; he was altogether unknown to the present Dr. Crosson.

In the case of Dr. Elisha Richardson Craven, who was one of the early members, dying a few years after the formation of the Society, it was found that there was a man of the same name living in Philadelphia. A letter to him was rewarded by a reply of which the following is an extract: "I was much pleased at receiving your letter, as it enables me to correct several errors in the statement concerning my father, to whom it relates. His name was the same as my own; he was born not in the District of Columbia, which at the date of his birth had not been set off from the State of Maryland, but in Morrisville, N. J. He was taken in his infancy to Philadelphia, in which city my grandfather had received an appointment as a member of the Fourth Auditor's Office, having supervision of the accounts of the United States Navy. My grandfather's first residence was in Georgetown. As soon as possible he built one of the first residences in Washington, at the corner of I and 19th streets n.w.—a house, by the way, in which I was born but which is now torn down. My father was graduated from Princeton College in 1815, and immediately entered upon the study of medicine in Philadelphia, in the office of Dr. Dorsey, Professor of Anatomy in the University of Penna. He was graduated from the Medical Department of that University in 1819. Immediately thereafter he commenced the practice of medicine in the City of Washington. Shortly thereafter he was appointed Professor of Botany in Columbian College. He died December 4, 1823, in consequence of an accident: in visiting a patient at night he was thrown from his horse; this brought on a hemorrhage from which he died. I was not born until the latter part of March, 1824. You will, I trust, excuse my prolixity and also my hand writing. I shall be *83* years of age in a few days." He signed himself, "With high regard, yours most gratefully and truly," showing how much he was pleased with the inquiry made by the Committee.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from March 1, 1905, to May 1, 1905, and the same period of 1906, in the District of Columbia.

DIPHTHERIA.

1905.			1906.		
Cases on hand March 1	19		Cases on hand March 1	32	
Cases reported from Mar. 1 to May 1	43		Cases reported from Mar. 1, to May 1	73	
Cases discharged, recoveries		44	Cases discharged, recoveries		70
Cases discharged, deaths		3	Cases discharged, deaths		10
Cases on hand May 1		15	Cases on hand May 1		25
Total cases	62	62	Total cases	105	105
*Per cent. of fatal cases		6.4	*Per cent. of fatal cases		12.5

SCARLET FEVER.

1905.			1906.		
Cases on hand March 1	28		Cases on hand March 1	30	
Cases reported from Mar. 1, to May 1	78		Cases reported from Mar. 1, to May 1	48	
Cases discharged, recoveries,		50	Cases discharged, recoveries		47
Cases discharged, deaths		2	Cases discharged, deaths		3
Cases on hand May 1		54	Cases on hand May 1		28
Total cases	106	106	Total cases	78	78
*Per cent. of fatal cases		4	*Per cent. of fatal cases		6

TYPHOID FEVER.

1905.			1906.		
Cases on hand March 1	55		Cases on hand March 1	29	
Cases reported from Mar. 1, to May 1	47		Cases reported from Mar. 1. to May 1	54	
Cases discharged, recoveries,		63	Cases discharged, recoveries		31
Cases discharged, deaths		12	Cases discharged, deaths		9
Cases on hand May 1		27	Cases on hand May 1		43
Total cases	102	102	Total cases	83	83
*Per cent. of fatal cases		16	*Per cent. of fatal cases		22.5

SMALLPOX.

1905.			1906.		
Cases on hand March 1			Cases on hand March 1	21	
Cases reported from Mar. 1, to May 1	9		Cases reported from Mar. 1, to May 1	7	
Cases discharged, recoveries,		4	Cases discharged, recoveries		26
Cases discharged, deaths		3	Cases discharged, deaths		
Cases on hand May 1		2	Cases on hand May 1		2
Total cases	9	9	Total cases	28	28
*Per cent. of fatal cases		42.8	*Per cent. of fatal cases		

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD, *Health Officer.*

Medical Society of the District of Columbia.

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*Members are requested to report errors in name or address to the Editorial Committee.

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King, Ernest F., A. M.,	Bond Building.
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Kolipinski, Louis, Phar. D.	631 I street, n. w.
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Koones, Charles K.,	600 M street, n. w.
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Lamb, Isabel Haslup,	2114 18th street, n. w.
Lamb, Robert Scott,	The Cecil.
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Leech, Daniel Olin,	631 Maryland avenue, n. e.
Leech, Frank,	1448 Rhode Island avenue, n. w.
Lehr, Louis C.,	1344 19th street, n. w.
LeMerle, Eugene L.,	2011 Q street, n. w.
Lemon, H. T. A.,	629 G street, s. w.
Lewis, Duff G., A. B.,	1311 14th street, n. w.

Lewis, Samuel E., 1418 14th street, n. w.
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Logie, B. Rush, St. Elizabeth Asylum.
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Lowe, Thomas P., 205 H street, n. w.
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Machinek, Camillo H., 1612 20th street, n. w.
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Mitchell, Joseph Ernest, 519 13th street, n. w.
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Morgan, Edwin L., 2315 Pennsylvania avenue, n. w.
Morgan, Francis P., A. B., 1760 U street, n. w.
Morgan, James D., A. B., 919 15th street, n. w.
Morgan, W. Gerry, The Rochambeau.
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Morse, Edward E., 1539 I street, n. w.
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Mullins, J. B., 1431 Rhode Island avenue, n. w.
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Muncaster, Steuart B., 907 16th street, n. w.
Muncey, Elizabeth B., 1337 R street, n. w.

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Nevitt, James R.,	1820 Calvert street, n. w.
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Newman, Henry M.,	2403 Pennsylvania avenue, n. w.
Nichols, J. B.,	1331 N street, n. w.
Norris, Phebe R.,	1109 14th street, n. w.
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Ruffin, Sterling,	1335 Connecticut avenue, n. w.
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Thompson, Joseph Ford,	816 15th street, n. w.
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Thompson, Millard F., D. D. S.,	484 Maryland avenue, s. w.
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Walsh, F. C.,	The Albany.
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Walter, John,	1127 13th street, n. w.
Walter, William F., A. M.,	713 4½ street, s. w.
Ward, William K.,	1756 Pennsylvania avenue, n. w.
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Wellington, John R., A. M.,	1706 Rhode Island avenue, n. w.
Wells, Walter A.,	The Rochambeau.

Werber, Gustav,	1353 Q street, n. w.
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Wilmer, William H.,	1610 I street, n. w.
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ARTERIOSCLEROSIS.*

By JOHN BENJAMIN NICHOLS, M. D.,

Washington, D. C.

Since the introduction of methods of precision in the diagnosis of the disease there has been in the past few years a great access of interest in the subject of arteriosclerosis, and a fuller appreciation is being reached of the importance and broad underlying relation which this condition bears to a wide range of morbid conditions.

In the causation of arteriosclerosis four factors are preeminent: malnutrition, toxic action, strain and heredity.

Although in standard works little stress is laid on it as an etiologic factor, it is my own belief that malnutrition plays a large part, in conjunction with other influences, in producing morbid conditions of the arteries. The arteries, although the carriers of food to other organs, are themselves among the poorest nourished structures in the body, as their walls are very scantily supplied with capillaries. It is this poor nutrition that is probably partly responsible for the marked incidence of arteriosclerosis on the underfed laboring classes and in connection with diabetes and phthisis. Local malnutrition from interference with the circulation of *vasa vasorum* (as from the obstructive endarteritis of syphilis) is held to be a cause of atheroma, degeneration and aneurismal dilatation of the areas deprived of nutriment.

Toxic action is largely operative in the production of a large class of cases, as in association with the gouty condition, alcoholism, plumbism, syphilis, diabetes, leukemia, etc. Excessive eating, especially of nitrogenous foods, is generally regarded as a very common and potent cause of arterial disease, partly from the toxic action of katabolic products, partly from overstrain of

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the vessels. Careful statistical studies have shown that arterial degeneration may be an after-result from infectious diseases, like typhoid fever, perhaps from combined toxic action and malnutrition. Toxic agents promote arteriosclerosis partly by augmenting blood pressure and vascular strain through stimulation of the heart or otherwise, partly by producing degenerations, partly in unknown ways.

Vascular strain is one of the principal causes of arteriosclerosis. The normal strain imposed on the arterial walls by the intra-arterial pressure of the blood is of considerable magnitude, amounting to 156 grams for every square centimeter, or nearly 2¼ pounds per square inch. A continuous strain like this maintained through a lifetime inevitably in time wears out the poorly-nourished arterial tubes, bringing on the physiologic condition of senility. Increase or excess of the strain above the normal hastens and promotes the arterial breakdown. Hence arteriosclerosis is caused or favored by laborious occupations, excessive muscular exercise, mental or physical overwork, frequent excitement, over-eating, high living, plethora, improper use of stimulants or stimulating food ; in short, by excessive use or abuse of the arteries or anything increasing blood pressure. The strenuous life and the merry life tell heavily on the arteries.

The rise in blood pressure produced by a hearty meal, active exertion, excitement and the like, is about 10 to 30 millimeters of mercury ; and this represents the extra strain which may suffice to initiate arterial disease. Atheroma has been experimentally produced by the administration of adrenalin and other substances.

It has been suggested that increase in the viscosity of the blood, arising from toxic or metabolic conditions, and necessitating increased pressure and strain to carry on the circulation, may have some part in the pathology of arteriosclerosis ; but this point has been too little studied for any reliable conclusions to be formed.

Heredity is an extremely potent etiologic factor, and the quality of the arterial tubing that is transmitted through the generations has as much as anything to do with the time at which vascular breakdown occurs. In some families arterial disease develops early, in the fifties and even forties, as evidenced by early aging of their members and their repeated deaths from apoplexy and other conditions of arterial origin at these early ages; in

other families the incidence of arteriosclerosis is unduly delayed, the individuals being regularly long-lived and reaching the eighties with good physical and mental vigor.

Arteriosclerosis affects all social grades, the poor being exposed to the causative factors of hard work and poor nutrition, while the rich are more subject to the plethoric and gouty tendencies. The colored race is especially subject and early subject to it. Males, being more exposed to the etiologic factors of physical and mental strain, alcoholism, over-eating, syphilis, etc., are more subject—that is, earlier and more severely subject—to the disease than are females.

In recent years vital statistics have shown a distinct increase in the proportion of deaths casused by arteriosclerosis and allied conditions; this fact has caused some apprehension, and explanations for it have been sought in a supposed increase in the consumption of alcohol, in more strenuous modes of living, and other similar causes. It is to be noted, however, that this class of diseases from which an increase of deaths has been observed is an affection of advancing age; and the increase in this class, in my opinion, shows that more persons are being saved from other disorders to live to and die of old age. So far from being a cause for alarm, this is really a testimony to the successful results of modern medical practice.

As to the *clinical manifestations of arteriosclerosis*, we have to consider not only the conditions presented by the vessels themselves, but also the systemic conditions and the local manifestations in various organs (the heart, kidneys, brain, eyes and extremities), which result from the general underlying condition.

Vascular manifestations.—The histologic changes that constitute arteriosclerosis are, briefly, localized thickenings and degenerations in the tunica intima (atheroma); hypertrophy and thickening of the intima (endarteritis obliterans); and in the tunica media and adventitia degenerations, thickening or hypertrophy, weakening, bulging, dilatation or rupture.

Important from a clinical standpoint is the division of cases into two classes, the diffuse and the localized.

The diffuse form of arteriosclerosis, or arteriocapillary fibrosis, tends to involve the vessels generally and uniformly, especially the smaller vessels, the morbid changes consisting especially of fibrosis and thickening of the vessel walls with little tendency to calcification.

The localized, circumscribed or nodular form of the disease is characterized by the development of scattered patches of atheroma and calcification of the arterial walls. In this form the lesions may be of very unequal distribution over the arterial system; thus, the peripheral or visceral arteries may be highly atheromatous, while the aorta is nearly or quite free from involvement; or internal vessels may be atheromatous while the peripheral arteries are soft and normal. Hence the radial arteries may show no evidence of sclerosis to the finger and yet the less accessible and internal arteries may be badly involved.

During life the widely extended arterial system is accessible for clinical observation at only a few points, direct observations on the arteries in ordinary cases being mostly limited to the radial, temporal, and ocular vessels. The temporal arteries often and the radials occasionally exhibit a characteristic lengthening and tortuosity, as well as thickening, conspicuously apparent to sight as well as feeling. The sclerotic radial artery may have a hard, cordy or leathery feel in the diffuse form of the disease; or in the atheromatous form it may have the familiar pipestem feeling, hard and calcified in irregular nodular or beaded areas. The ability to feel the artery or roll it under the finger, when by pressure to the proximal side the pulse is obliterated, is by many authorities accepted as a proof of the existence of arteriosclerosis in the radial artery; but it is my own belief that in thin subjects and with a too well-trained sense of touch, palpability of the radial is not necessarily a sure criterion of its being materially sclerosed. In emaciated subjects many other superficial arteries—brachial, femoral, popliteal, etc.—become accessible to observation by inspection or palpation, and may show the characteristic changes.

The retinal and choroidal vessels in arteriosclerosis usually show changes distinctly visible to the skilled ophthalmoscopist. So early and so well marked may these ocular manifestations be that, especially in doubtful cases, they may be of great value in diagnosis and prognosis, and a complete study of any case should include the results of ophthalmoscopic examination.

The pulse exhibits two prominent features in arteriosclerosis—infrequency and high tension.

While in the majority of cases the pulse rate is not altered, in many instances it is characteristically lowered, to 60 or 50 per

minute, sometimes to 40 or 30, or even less. Any patient with an infrequent pulse rate should be examined as to the possible existence of arteriosclerosis. This slow rate is apparently due to the close association between the vagus center and the vasomotor centers, the same influences acting on the vasomotor centers to raise blood pressure also at times acting on the vagus center to stimulate cardiac inhibition. Infrequent pulse and increased blood pressure are, therefore, physiologically interrelated.

The intra-arterial blood pressure in arteriosclerosis is of the utmost diagnostic, prognostic and therapeutic importance, serving as an index of the morbid conditions present. While the blood pressure is not increased in every case of arteriosclerosis, (I have seen cases of marked diabetic, leukemic and senile arteriosclerosis with normal and even diminished blood pressure,) in the vast majority of cases it is increased, and often very greatly increased, rising from the normal 130 millimeters of mercury in the brachial artery to 180, 200 and even 250 millimeters, or more. A decided increase may be present before the accessible arteries show any evidences of sclerotic changes, while the sclerosis is still confined to small terminal vessels not amenable to direct observation ; hence the usefulness of sphygmomanometry in early diagnosis.

The increase of blood pressure is manifested by a hard, incompressible pulse and an accentuated diastolic heart sound ; but it can be studied adequately only by means of the sphygmomanometer, and the use of this instrument affords an insight into the conditions present that would otherwise be unobtainable.

The precise relationship between the increased blood pressure and the arterial changes is as yet an obscure point. Especially as to the early stages of the disease the question arises : Which develops first, the increased pressure or the vascular lesions? Which is cause and which result ?

Some authorities look upon the increase of blood pressure as the primary and antecedent condition, from which the anatomic alterations result. While some of the recognized causes of arteriosclerosis, such as overwork, excitement, strenuosity, plethora, overeating, etc., act by increasing blood pressure and causing vascular strain, the direct increase of pressure producible by these factors (not over about 20 or 30 millimeters of mercury) is much less than the increase manifested by ordinary cases of the disease.

The hypothesis of vascular spasm is also advanced to account for the great augmentation of blood pressure. No satisfactory explanation is offered, however, as to the causes that can produce and maintain continuously so great a degree of vascular spasm as this theory demands; the vasomotor mechanism is extremely delicate, efficient and stable in its action, and is not easily permanently deranged; and the inability frequently encountered to produce marked impression upon the blood pressure by the use of vasodilator drugs points to the absence of any great spastic origin for the high pressure.

For these reasons I am disinclined to believe, in general, that beyond a small initial increase of 20 or 30 millimeters the great rise of blood pressure is a primary or spastic condition; on the contrary, I am disposed to the view that any permanent marked increase must result from actual arterial changes. When from any cause the arterioles become generally damaged, an increase of circulatory force and blood pressure is brought about by the coördinating action of the vasomotor centers sufficient to maintain an adequate circulation of blood through the stiffened and contracted vessels. My conception of the evolution of the high blood pressure and the lesions is this: That a comparatively small initial increase of pressure, such as arises from the various causes of vascular strain, may suffice to start sclerotic processes in the vessels; the vasomotor mechanism then has to maintain a higher standard of blood pressure, even in the resting condition, in order to keep up adequate circulation through the vessels so damaged; starting from this new level, the original factors at work again cause further vascular strain and induce new arterial changes, which in turn form a new point of departure for still further changes. In this way an excess strain amounting only to 20 or 30 millimeters may, along with the induced lesions, step up until a total increase of over a hundred millimeters is accomplished. Between the excess blood pressure and the lesions a vicious circle is established; both conditions advance side by side through mutual interaction.

According to this view, the great increase of blood pressure in arteriosclerosis results from the compensatory effort of the organism to maintain adequate circulation through the damaged vessels. The proper performance of the body functions in arteriosclerotic subjects requires a high blood pressure; the necessary standard

for them is higher than for the ordinary healthy individual. It follows, therefore, as clinical observation shows, that while high blood pressure introduces certain harmful and dangerous conditions, too great a lowering of the pressure in arteriosclerotic patients, even to a point that would be above normal for a healthy person, might have injurious consequences and produce conditions approaching shock and collapse. In treatment, therefore, it may be both unnecessary and unwise to attempt to bring about too great a reduction of blood pressure.

Just as in cases of heart disease cardiac crises occur, so it is probable that in arterial cases vasomotor crises may occur. These may be of two kinds : hypertensive crises, in which blood pressure may be further temporarily increased ; and hypotensive crises, in which it may become greatly lowered, a sort of loss of vascular compensation analogous to the loss of compensation in cardiac failure.

Systemic Manifestations.—So long as vasomotor compensation is maintained the general nutrition does not necessarily suffer in arteriosclerosis. In fact, especially in the diffuse cases of the disease, patients with excessively high blood pressure may appear as if in the best condition, ruddy, stout, well nourished ; they often feel vigorous, take pride in their physical powers and strength, and receive with incredulous resentment the advice to curtail their physical activities.

In advanced cases, however, especially in the senile form of the disease, the crippling of the circulatory apparatus results in impairment of nutrition. The tissues are wasted and flabby, the skin loose and wrinkled, the *panniculus adiposus* atrophied, and emaciation, asthenia, anemia, and the familiar aspect of senility are present.

When arteriosclerosis is once well established as a primary condition, three important organs—the heart, the kidneys, and the brain—are exceedingly prone to become secondarily affected, and present symptoms so conspicuous that often the primary arterial trouble is overlooked. Any one, any two, or all three of these organs may be involved together.

The *cardiac manifestations* of arteriosclerosis ("arterial cardiopathies") are chiefly hypertrophy or dilatation, valvular disease, myocardial degeneration, angina pectoris, and other cardiac crises. Hypertrophy or dilatation may result from the increased

work required of the heart to maintain the heightened blood pressure. Valvular insufficiency may be caused by the greater strain on the valves, and valvular stenoses by participation of the endocardium in the vascular lesions. Myocardial degeneration may arise from impaired nutrition resulting from atheroma of the coronary vessels. Angina pectoris results from myocardial changes, or from embarrassment of the heart laboring against the strain of high blood pressure. Dyspnoea, asthma and slight pulmonary congestion or bronchitis may also occur.

The attention of the clinician in cardiac cases is apt to be directed too exclusively to the heart itself, to the neglect of the rest of the circulatory apparatus. The heart is not an independent organ, but has an intimate and inseparable organic, physiologic and pathologic connection with the blood vessels. Many cases of cardiac disorder have an essential relation to or origin from abnormal vascular conditions, and rational understanding and treatment of such cases require a full knowledge and consideration of the vascular conditions present, and especially of the blood pressure as an index of the arterial conditions.

Renal Manifestations.—The association of arterial disease with chronic interstitial nephritis has been long recognized, athough there has been some difference of opinion as to which is the primary and which the secondary condition. There can be little doubt, however, that in many cases, at least, the arterial lesions develop first, and that the renal changes develop subsequently, either from the participation of the renal vessels in the general arterial involvement, or from the incidence of sclerotic processes in the kidney parenchyma from the same causes that produce similar changes in the arteries. The urinary manifestations of intersti tial nephritis—polyuria, low specific gravity, casts, slight or occasional albuminuria, etc.—may be important evidences of arteriosclerosis, even in incipient cases of the disease, so that slight symptoms of renal disorder may be of great significance in the diagnosis of early general arteriosclerosis.

The *cerebral manifestations* of arteriosclerosis are among the most frequent and most serious results of the disease, and exhibit all gradations from slight circulatory disturbances to apoplexy and hemiplegia. The cerebral vessels are exceedingly prone to atheromatous and sclerotic changes of the most marked character. The stiffened cerebral vessels, perhaps with obstructed lumens,

cause local inequalities or disturbances of circulation or ischemia, which may probably be still further increased by reflex vasomotor impressions set up from the disordered areas; a sort of vascular ataxia. In this way local vascular obstruction or spasm and vascular relaxation produce corresponding local areas in the brain of relative anemia or relative hyperemia; these disturbances are transitory, the coördination being after a time restored. Corresponding transitory nervous and psychic phenomena result from these conditions, such as attacks of vertigo, headache, spasms and epileptoid attacks, syncopal attacks, bradycardia, the Stokes-Adams syndrome, Cheyne-Stokes breathing and other respiratory anomalies, transient paralysis or sensory disturbances in the extremities, temporary aphasia, psychoses, etc. These attacks last from a few minutes to a few days. While in their worst forms they may arouse much alarm from the resemblance they may bear to the results of hemorrhage, thrombosis or embolism, they are in reality of a functional character, as is shown by their prompt subsidence. Vertigo is an especially significant symptom, even in early stages of arteriosclerosis.

Permanent organic changes are very common. Circulatory insufficiency in the brain causes lowered nutrition, frequently resulting in cerebral softening and senile dementia. Thrombosis may occur. A very common event in arteriosclerosis, often terminal, is cerebral hemorrhage and hemiplegia, the brittle and weakened arteries rupturing under the greatly increased blood pressure.

Ocular Manifestations.—Serious involvement of the eye may take place in general arteriosclerosis, in the form of retinal hemorrhages or of so-called albuminuric retinitis, which really appears to be a sclerosis of the retinal and choroidal vessels rather than a genuine retinitis, and with no more specific association with albuminuria than that the ocular and renal lesions have a common underlying arteriopathic basis. These ocular lesions may be associated with extremely high blood pressure, often over 250 millimeters; and they produce not only serious visual disorder, but are of the gravest prognostic import as to life.

The *extremities* are not infrequently involved in arteriosclerosis in the form of gangrene (senile gangrene) caused by obstruction of the peripheral arteries by thrombosis or endarteritis obliterans. The neurologists also recognize intermittent claudication or intermittent limping as an occasional manifestation of arteriosclerosis in the limbs affected.

The development of arteriosclerosis is very gradual and insidious, and its course very protracted, extending over a period of years.

All the various manifestations of arteriosclerosis that have been mentioned do not occur in every case of the disease ; some appear in one case, others in other cases. All combinations and gradations in the anatomic changes and clinical phenomena occur ; still, on observation and consideration of large numbers of cases certain well marked types of the disease may be differentiated, although many intermediate and blended cases are encountered that elude ready classification.

The subject of the classification of cases of arteriosclerosis may be approached by a consideration of the important relation which this disease bears to age. The disease is rare in youth except in connection with conditions like diabetes and leukemia. An important group of cases of the severest character develops in the early part of adult life, below the age of about 40 years ; most of these cases are of syphilitic origin. In middle adult life, after this early group of cases and before the late or senile cases, the group of diffuse, toxic or lithemic cases mostly develops. Latest of all, in general, develop those cases of the senile type.

Aside, therefore, from special forms like diabetic, leukemic and phthisical arteriosclerosis, three prominent types of the disease stand out from the mass of cases—the syphilitic, the diffuse and the senile types.

Syphilitic arteritis is a common form of arteriosclerosis. The commonest arterial lesions are obliterating endarteritis, fibrosis and circumscribed weakening of the tunica media. Arterial involvement is frequent in syphilis, and develops most often in the early secondary period, most frequently in the first year, and in after years with diminishing frequency. It is usually the earliest of the common forms of arteriosclerosis to develop, the cases of apoplexy, hemiplegia, aneurisms and the like occurring in the earlier half of mature life, say under 40 years, being always strongly suspicious of and in most cases being capable of being traced to a syphilitic origin. The arterial lesions may be universal or limited to circumscribed regions, and any part of the body may be affected. Aneurisms are frequent. The arteries of the brain are especially prone to syphilitic disease, and cerebral symptoms of all kinds, up to hemorrhages, hemiplegia and

insanity, are correspondingly frequent in this form of arteriosclerosis.

The diffuse form of arteriosclerosis, or arteriocapillary fibrosis, is very common, and is associated especially with plethora, the gouty condition, high living, etc. It develops most frequently in the middle adult period, after the syphilitic and before the senile cases. The smaller vessels generally are thickened, and there is less tendency to calcification than in the senile form. The blood pressure is apt to be greatly increased in this variety, usually more than in the other forms. The kidneys, heart and brain are especially apt to be involved, and often all three together, in a most characteristic manner.

The senile form of the disease is ordinarily the latest of all to develop, though true senile cases may develop at very prematurely early ages. All individuals who live sufficiently long at last inevitably acquire this form of arteriosclerosis; and it is exceptional in autopsies on adults from middle life onward to find the aorta entirely free from atheromatous involvement.

In view of the inevitable occurrence of arteriosclerosis in old persons, it can be said with equal propriety that age causes arteriosclerosis, and that arteriosclerosis causes age. The lesions are especially of the nodular variety, consisting of scattered patches of atheroma and calcification. The blood pressure is moderately increased, but usually not so much as in other forms of arteriosclerosis, and it may even be normal. The cerebral arteries are very prone to involvement, and apoplexy and hemiplegia are very frequent terminal events.

In the *prognosis* of arteriosclerosis results of the most serious character may be anticipated in advanced cases, on account of the vital organs secondarily involved. Sudden death, from cerebral, cardiac or renal crises, is a very common outcome. So far as can be judged from the experience of the few years that have elapsed since its introduction, sphygmomanometry affords information of high prognostic value in this disease, and should be of practical service in life-insurance work. If an apprehensive individual after middle life without palpable arterial changes is found to have a blood pressure, while resting and fasting, under 140, there is no prospect of the immediate or near advent of arterial disease. A moderate increase of the pressure, up to, say, 160 or 170, indicates a moderate development of arteriosclerosis, but without any

great probability of immediate disaster. With a blood pressure over 200 or 220 the prospect is very grave, and while life may continue for years, sudden death or breakdown may be expected at any time, and the greatest care of the patient is needed.

Treatment.—As arterial changes, once established, cannot be reduced, the earlier treatment is instituted the greater are the results to be hoped for; and most of all is to be expected from prophylactic treatment in persons whose habits, mode of life or heredity are likely to subject them to the development of the disease. Successful preventive treatment against arteriosclerosis means the attainment of longevity. Hence the importance of the recognition of the threatened and incipient cases at a time when treatment can be most effective. As in the case of neurasthenia, the evolution of the disease is so prolonged that it may be difficult in the early stages to convince the patient of the danger of ultimate disastrous consequences, or to induce him to pursue the proper regimen faithfully when the evil results are so remote.

The etiologic factors at work in each case must be carefully determined, and a main purpose in treatment must be to eliminate the action of these factors. The habits and mode of life should be carefully regulated and permanently adjusted to the indications. The strain from hard muscular and mental work should be eliminated as far as possible, physical exercise restricted, a laborious occupation, if practicable, given up or changed for an easier one. Plenty of rest and sleep should be taken. Absolute rest in bed may be of the utmost service, especially in impending crises like threatened apoplexy.

The diet should be sparing and moderate in amount, plain and digestible, with nitrogenous food diminished. Excesses and irregularity in eating, and indigestible and stimulating food should be avoided. The use of alcoholic drinks should be given up, and tobacco, which is said markedly to raise blood pressure, reduced to a minimum.

Mental strain, overwork, excitement, worry and any conditions that impose extra strain on the arterial system should be avoided. In the extreme cases where the occurrence of cerebral hemorrhage is an ever-impending danger especial care is necessary to avoid strain on the brittle arteries, already near the point of rupture. In this condition a hearty meal or a banquet may cause sufficient

elevation of the blood pressure to cause apoplectic or other seizures; many cases of sudden death of this sort are commonly attributed to "acute indigestion." Coitus by the old has been known to cause cerebral hemorrhage. Vomiting and violent coughing may be similarly dangerous, and should be guarded against; emetics should therefore be used with caution, and sea trips, from the vomiting consequent on seasickness might be very inadvisable. Quinin and salicylates should be used with caution in patients with atheromatous arteries on account of the disturbance and increase of cerebral circulation which they cause, and the distinct danger of rupture of cerebral vessels which they offer. Cardiac stimulants like digitalis and alcohol are apt to be useless and harmful when the blood pressure is unduly increased—useless, because a heart capable of maintaining excessive blood pressure needs no stimulation; and harmful, because further increase of blood pressure would aggravate the conditions and dangers already existing. There is danger of inducing apoplexy by the injudicious use of stimulants in cardiac crises when what is needed is not stimulation but vascular depression.

The skin, bowels and kidneys should be kept active, to unload the circulation. The frequent use of saline purges, frequent hot or Turkish baths for diaphoretic purposes, and copious water drinking conduce to this end.

In the medicinal treatment the iodides easily hold first place, and should, in all cases of arteriosclerosis and its cerebral, cardiac and renal manifestations demanding active treatment, be given a fair trial. By their use in well established cases the symptoms, such as vertigo, etc., may be markedly ameliorated; in the early stages the disease may be arrested or retarded. The favorable results long and well known to be obtainable from use of iodides in aneurisms and angina pectoris illustrate the efficiency of the drug in special aspects of arteriosclerosis. It seems to act in an alterative manner on the diseased vessel structures, or perhaps, according to some recent observers, by lowering the viscosity of the blood; its use is not as an antisyphilitic. Small doses only are needed, 0.20 to 1.00 gram of potassium iodide, or 1 to 4 cubic centimeters of syrup of hydriodic acid, three times a day, continued for a protracted period; except that in the syphilitic cases the usual massive doses are indicated.

Trunecek's "serum" is highly lauded by some in arterioscle-

rotic conditions, but in the few cases in which I have tried it I have not obtained any beneficial results.

In view of the great increase of blood pressure in arteriosclerosis, the first and natural impulse in treatment is to make every possible effort to lower it. Yet this is a point that requires consideration. If the increase of blood pressure to any point, however high, is a matter of physiological necessity, required for the maintenance of proper circulation, then indiscriminate attempts to lower the pressure beneath that point must necessarily be injurious. However, since excessive blood pressure tends to cause increase of the lesions and introduces danger of rupture of brittle cerebral vessels, the indication is very clear and important to reduce the intra-arterial pressure to the lowest point compatible with proper circulation. The clinician should attempt to determine for each case the degree of pressure best adapted to its physiologic needs; increase of pressure above that point requires measures for reduction, while depression below it may and sometimes does require contrary measures (stimulation) to be taken. Fortunately the vasomotor mechanism is very steady and stable, and its compensatory action not easily broken down; so that the small lowering of blood pressure ordinarily obtainable in cases of arteriosclerosis probably represents the reduction to the physiologic *optimum*, and need not cause undue discouragement or lead to exaggerated attempts to bring about still greater lowering.

The chief means for lowering blood pressure are hygienic measures like a quiet regimen, rest in bed, spare diet, etc.; depletion of the circulation by free diaphoresis, catharsis and diuresis; bleeding; arterial sedatives like aconite and veratrum; and vasodilators like the nitrites.

Among medicinal means for lowering blood pressure the nitrites are at present most in favor; amyl nitrite, in emergencies, giving an immediate and powerful though fugitive action; and nitroglycerin or sodium nitrite when a prolonged and continuous effect is desired. The results obtained from these drugs will often be disappointing, so far as any great perceptible effect on the blood pressure is concerned. This is due to several reasons. First, the nitrite preparations are unstable and unreliable. Second, different individuals vary greatly in their susceptibility to the drug; with some the ordinary dose causes distressing symptoms, headache, vertigo, cerebral disturbance, etc., while others require very

large doses to produce any effect at all; the effective dose is therefore an individual matter, to be determined in each particular case. Third, as the high blood pressure is probably due more to organic changes than to spasmodic conditions, the nitrites would have no action in the former condition unless used in amounts sufficient to break down the vasomotor compensation and thus approximate a vicious and toxic result. Under these circumstances the indication for the use of the nitrites is to keep down the excessive arterial strain and relax whatever spasmodic condition may be present.

Bleeding is a prompt and efficient means of lowering blood pressure which is available when emergencies like threatened apoplexy demand immediate action.

In the various secondary and visceral manifestations (cerebral, cardiac, renal, etc.) of arteriosclerosis, special indications for treatment are presented, but general consideration and treatment of the underlying arterial condition will be found the basis for the most rational and effective management.

Dr. D. S. Lamb said that Dr. Nichols had spoken so well, so fully and logically, that nothing remained to be added, nor could any criticism be made. Dr. Lamb desired, however, to call attention to the early age at which the signs of arteriosclerosis may be found post mortem; he had repeatedly found evidence of the disease at as early ages as 30 or 40 years. When found so early, symptoms must soon arise as a result of the effects of the changes upon the heart.

Dr. Claytor said that in considering the etiology of arteriosclerosis the effects of the acute infections should not be overlooked. Typhoid fever, notably, has not lost its power for mischief with the establishment of convalescence. Thayer has found distinct evidences of arteriosclerosis after it. We must therefore warn typhoid patients against too early resumption of active life.

The apparent absence of arteriosclerosis in the periphery often obscures the diagnosis of arteriosclerosis of the internal vessels; as for instance of the coronary arteries, attended by secondary cardiac lesions. Dr. Claytor had recently examined a man, 60 years old, whose peripheral vessels were soft and pliable; but the blood pressure registered 215 to 220 mm., and the urine contained casts. Such an individual makes a bad insurance risk; the condition is progressive, and general arteriosclerosis may soon be expected.

An alarming symptom complex to be seen in arteriosclerosis

and due to spasm of cerebral arteries is well illustrated by two cases recently seen by him. Both were women and both were arteriosclerotic, with high blood pressure. One presented symptoms of cerebral hemorrhage, and became hemiplegic and aphasic. A bad prognosis was given; but after remaining about 24 hours the symptoms disappeared and motion and speech returned. The second patient developed paralysis of one arm and aphasia; these symptoms persisted for three days and then disappeared. She later died of typical apoplexy. These cases can only be explained by assuming that the symptoms were due to spasmodic ischaemia of the brain.

The haemomanometer is a most useful instrument in the diagnosis of arteriosclerosis. How valuable it may become in the treatment of the disease is not known, but it certainly makes the study of the condition more interesting.

The attempt to reduce the blood pressure by medicine is disappointing. The nitrites are not of much benefit. Iodides in 5 or 10 grain doses three times a day do reduce the pressure somewhat and relieve the symptoms. He has used hot baths without much effect. Rest in bed, light diet and purging make up the most effective treatment.

Digitalis may be very harmful. As early symptoms of arteriosclerosis often are dyspnoea, cardiac hypertrophy, and a murmur of some sort, they apparently indicate heart weakness, and there is danger that careless physicians might give digitalis. This mistake should be carefully avoided.

He had thoroughly enjoyed Dr. Nichols' paper. Arteriosclerosis is a disease of the utmost importance and most destructive of life.

Dr. Shute said that he also had enjoyed the paper; any essay or discussion on arteriosclerosis is of interest. Not the least interesting features of the subject are the ocular manifestations of the disease and the ocular crises that may occur in its course.

The ophthalmoscope has by some students of arteriosclerosis been extolled, by others it has been ignored. An anatomical fact which makes the ophthalmoscope of utmost value in the study of this disease is that the optic is not a cranial nerve like the facial or the trigeminus, but it resembles the olfactory nerve, which is now recognized for developmental reasons as being a lobe of the brain. For the same reasons each optic nerve and part of the corresponding retina are segments of the brain itself. The ophthalmoscope, therefore, reveals directly the condition of the vessels of the brain. Ophthalmoscopic inspection as a diagnostic method must not be limited to so-called albuminuric retinitis; by its employment the beginnings of arteriosclerosis may be noted long before any peripheral changes can be observed.

Dr. Rhett called attention to the value of veratrum viride as an agent to control the high blood pressure of arteriosclerosis.

Dr. Oscar Wilkinson said that in studying the optic evidences of the disease under discussion, gross lesions may very readily be seen, but good judgment is necessary to determine the presence of the early changes. A question of great interest to him is what relation exists, if any at all, between arteriosclerosis and cataract. Mitchell has found an apparent connection between cataract and sclerosis of the carotid artery, but later investigators have failed to confirm his opinion. Dr. Wilkinson's own opinion is that arteriosclerosis does not cause cataract ; the two conditions result from the same causes, and are parts of the same degenerative process.

CASE OF ABDOMINAL PREGNANCY; OPERATION.*

By I. S. STONE, M. D.,

Washington, D. C.

Mrs. Alice Dorsey, colored, age 28, was admitted into the gynecological department of Columbia Hospital, April 8th, 1906, with the following history : She had been married eight years, without children, having been impregnated but once, and miscarried at the end of the third month. This occurred seven years ago. Her first menstruation was at the twelfth year since which time she has been regular, with no special pain or unusual symptoms. Her last period occurred in May, 1905, since which time she has not been well. She has a tumor of large size, and thinks herself pregnant. Her family history is unimportant. She gives no history of any infectious disease which may have been in any way concerned in the present illness. She made a quick recovery from the miscarriage, and had no pelvic symptoms of any kind afterward which attracted her attention. Her period failed to appear February 15th, 1905. She had, as she supposed, a return of the flow in May, and again in July, and in August.

Beyond doubt the pregnancy began about the date mentioned, for she had many of the associated symptoms. She grew stouter and her breasts were greatly enlarged. The enlargement of the abdomen continued to increase until Dec. 15, when the death of the fetus occurred. Distinct fetal movements were experienced by the patient, which continued the usual time, or possibly longer, and ceased about the time mentioned, Dec. 15. Her

*Reported, with specimen, to the Medical Society April 25, 1906.

physician (Dr. Brooks) also heard the fetal heart sounds on several occasions. The patient says she was very ill in May, at the time of the supposed period, with cramps and abdominal pains, which continued for twelve hours, and were followed by nausea and vomiting. Severe pain was experienced in December (about the time she was expecting delivery), for which her physician prescribed castor oil in large doses. The pain was located at first in the left side, but the patient declares that after the oil was administered there were greatly augmented fetal movements, and we suppose that her physician thought these were uterine contractions. She says the tumor moved violently, and that since that time she has had no further motions of either tumor or fetus.

At this time she was very ill. She had fever, was thirsty, and much nauseated. After this period of pain she passed from the vagina a mass which she describes "as the size of her fist", and which was pronounced by her physician to be decidual membranes. He says that the cervix at this time was small and firm, and we think it possible that the mass may have been a blood clot. From the middle of December until recently the size of the tumor has diminished until it became stationary. When first seen at the dispensary, a month before she was sent in for operation, her breast contained a quantity of milky fluid. A sound was inserted into the uterus at this time and the canal was found of normal depth. Our first examination, made only a few days before the date of operation (April 11), gave us pretty satisfactory reasons to think her pregnant, with a dead fetus, and we noted the excellent condition of the patient in every particular. She had not been suffering pain nor had she lost much in weight, having been well nourished, and her heart, lungs, kidneys, nervous system, etc., were in good condition. The abdomen was conspicuously enlarged by a tumor, which reached from the lower pelvis to the epigastrium, at a point about two inches above the umbilicus. The tumor was fairly movable, oval, and very firm, quite as firm as a fibrous tumor. Its upper end was rather softer, and gave the sensation to the hand of a soft myoma. Without the history we should unhesitatingly have pronounced it a fibrous tumor, as she is a negress. There was no perceptible fluctuation, nor was there suspicion of an ovarian growth. The uterus was located on the anterior surface of the tumor, but it was

not easily outlined, and merged into the tumor so gradually that one might easily fail to locate the fundus. The intestines were evidently pushed well above the tumor, and laterally, as there was no resonance save in the flanks and in the epigastrium.

The Operation.—On opening the abdomen, and after separating omental adhesions, we found the tumor to consist of an oval symmetrically shaped mass, with an even surface and without loculi or compartments. Its appearance still gave no proof of its nature. The uterus was found situated rather higher than normal, and we could see the left tube spread out over the left anterior aspect of the tumor. A broad adhesion was separated from the right anterior surface, and we found it easy to push away the uterus from the tumor, so easy that we concluded the growth to have been adherent only, and not under the peritoneum at this point. Still continuing the dissection, we found the ileum adherent on the extreme upper posterior end of the tumor, and this was only partially separated until after we had removed the growth from the abdomen and had completed its enucleation from its other attachments. As we separated the bowel adhesions the sac was torn, and a quantity of dark fluid escaped, which now confirmed our diagnosis of abdominal pregnancy. After removing the tumor we found the mesentery of the sigmoid open, and this was closed with a suture of catgut, and proved to have been the only place where the tumor was subperitoneal. The ileum was nearly perforated and ready to receive the fluid contents of the amniotic sac. This defect was the beginning of nature's efforts to discharge the fetus, and it is problematic how far she would have succeeded with an undertaking of this size.

We have here, then, a specimen which appears to the reporter as a case of abdominal pregnancy that primarily was tubal, and by either tubal rupture or abortion was permitted to escape intact, perhaps first into the broad ligament, then out of its bed there and continuing its own life, avoiding necrosis by acquiring new sources of blood supply, and at the same time continuing the life of the fetus and fetal membranes until past the time of normal gestation.

Dr. Brown Miller said that he had seen Dr. Stone's patient both before and at the operation. The history was typical of ectopic gestation, so characteristic that the historian made the diagnosis before the physical examination. Abdominal palpation,

however, appeared to negative the diagnosis. A large tumor was palpable, but the thick walls of the sac made the character of the mass uncertain; so tense was the enveloping membrane that the fetal head could not be discerned. The tumor resembled an ovarian carcinoma.

At the operation it seemed to Dr. Miller that the rupture had occurred into the broad ligament; the growth had pushed up the tube and part of the broad ligament so that these structures were stretched over the summit. The specimen was very unlike his own case reported to the Society last year, in which the membranes were quite thin and the fetal heart could be heard, and the head and limbs palpated; the tumor extended higher in the abdomen. In his case, also, the placenta was attached to the fimbriated end of the tube. The sacculated embryo constituted a pedunculated tumor, the pedicle being tube, ovary and broad ligament.

Dr. Taber Johnson said that Dr. Stone's specimen was of a very rare condition. There are many cases of ectopic pregnancy, but the state observed in this instance is very unusual. The gestation no doubt began in the tube. The course of abdominal gestations, as outlined by Dr. Stone, is the usual one. After tubal development has proceeded as far as anatomical limitations will allow, rupture takes place through the tube wall, allowing the fetus to escape into the broad ligament, the placental implantation remaining *in situ;* a subsequent rupture of the broad ligament allows the fetus to escape into the abdominal cavity. But the placenta may also be displaced and new implantation may be effected anywhere in the abdomen.

If the tubal rupture does not cause fatal hemorrhage, the pregnancy goes on as usual. At times the rupture occasions no symptoms whatever, and the diagnosis may never be made until wonder arises that labor does not occur. Dr. Johnson related the history of a woman from Halifax, who, after passing the date of her expected accouchement, was subjected to all sorts of methods to induce labor. The cervix was dilated, and efforts were even made to rupture the bag of waters; no labor resulted and the patient came to Washington to die. Dr. T. C. Smith suspected that her pregnancy was extrauterine, and in consultation the speaker agreed with Dr. Smith. The operation was very simple; there were no adhesions, and a vascular fibrous sac, containing a 13 months fetus, was easily removed. The mass was enucleated from a non-vascular bed; when delivered, only one little bleeding point required attention in the bed. On opening the sac, a shrunken fetus rolled out, very like the one exhibited by Dr. Stone.

After fetal death, the *liquor amnii* is absorbed, the sac shrinks, and from these changes error in diagnosis easily arises. The formation of a lithopaedion may result, or ulceration into some

adjacent viscus may end the condition. The state of affairs found by Dr. Stone probably occurs not oftener than once in 500 gestations outside the uterus.

While in New York recently, Dr. Boldt spoke of a similar case encountered in that city as being exceedingly rare, and said that in his large experience he had never seen another case like it.

Dr. Stone, in closing the discussion, said that he had hoped to hear in the debate something about the etiology of the condition. He could not let the opportunity escape to speak of diseases of the tubes as etiological factors—particularly conditions which result in denudation of the ciliated epithelium.

He believes that Lawson Tait's observations on the mechanism of the production of abdominal gestation were not sufficiently accurate and were erroneous. Tait held that in most cases of this anomaly the gestation originated in the tube, thence the fetus ruptured into the broad ligament, and there grew until a subsequent rupture set the fetus free in the abdominal cavity. Dr. Stone's observation has been that in the majority of cases the broad ligament is not involved. Edgar states that not over one-fourth of tubal pregnancies rupture into the broad ligament; three-fourths rupture directly into the abdominal cavity, and there the gestation is continued. Edgar gives also a most admirable account of the pathology of the condition. His observations have been most careful and are probably correct.

THREE CASES OF TUBERCULOSIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Within a few weeks past I have made three *post mortem* examinations on subjects dead of tuberculosis.

1. From a colored man, age 35, who died of acute miliary tuberculosis of both lungs; the lungs were studded with very small tubercles; the spleen was in a similar condition, and each kidney contained a few very small tubercles. I did not keep the specimens, but the case was interesting from the rapidity with which it reached a fatal end. The clinical history covered little more than three weeks, and apparently there was as yet no appreciable loss of flesh.

2. From the second case, I have portions of lungs and of the greater omentum. Only the left lung was involved, studded

*Reported, with specimens, to the Medical Society April 11, 1906.

with large cheesy masses in the upper lobe; the right was unaffected, except that both lungs were firmly tied down by adhesions. The bronchial glands were enlarged and cheesy. The peritoneum was everywhere studded with tubercles; there were delicate adhesions between the coils of intestine, and the cavity of the peritoneum contained some serum. The greater omentum formed a large, thick tubercular mass, and each kidney contained a few small tubercles. The liver and spleen were not affected. The subject was a colored man, age 48, who had been working in the sewers; his family history was not bad; but he himself had had pneumonia and grippe, and had also had gonorrhoeal rheumatism and drank liquor to excess. The clinical history covered about seven months; there was loss of appetite, night sweats, hacking cough, with an expectoration streaked with blood; swollen ankles, and loss of flesh.

In this case it would seem that the disease began in the greater omentum and extended thence to the entire peritoneal cavity; also to one lobe of one lung, and was just beginning to involve each kidney.

3. The third case was a colored boy 7 years old, from whom I obtained some cheesy mesenteric glands, lungs showing broncho-pneumonia, and the brain. The brain shows a few scattered tubercles along the fissures, the arachnoid at the base is opaque, the cerebro-spinal fluid was increased, the ventricles are dilated and were filled with serum. Both lungs showed broncho-pneumonia, and I suspect that it was from this the child died; but the cause of the broncho-pneumonia is not clear to me. The mesenteric glands show cheesy degeneration. There were no tubercles in the lungs, the liver, spleen or kidneys. The peritoneum was everywhere congested, and the cavity contained turbid serum and lymph. Apparently the disease began in the mesenteric glands, and extended thence to the entire peritoneal cavity and to the membranes of the brain.

The clinical history covered only a little over four weeks; the child had had measles and whooping cough, but the history does not connect either of these with the fatal disease, and the family history was also negative. The first symptom noticed was pain; the child complained of pains in the calves of the legs; and there was difficulty of locomotion and complaint also of weakness. Then there was pain in the forehead and eyes and

back of neck; and at times the child was delirious. He was in hospital 12 days, during which time the most marked symptoms were oedema of eyelids with ptosis, the eyes continually opening and closing as if from photophobia, the legs constantly flexed on the thighs, and there were purpuric spots over the entire body. I did not find these, however, at the autopsy. There was general hyperaesthesia. The heart and lung sounds appeared normal, and the fatal pneumonia was not diagnosed. The symptoms rather suggested a brain lesion, but the morbid anatomy of the brain is not sufficient to cause death.

Here, then, are two cases in which the organs in the peritoneal cavity were tubercular, and apparently the primary disease, but the secondary conditions were different in each case.

Dr. J. D. Thomas said that the specimen of tuberculous mesenteric glands reminded him of two cases which he had recently seen at autopsy; both were children and both had large masses of cheesy glands in the mediastinum. In one case a conglomerate mass of glands had been found, which occupied a space equal in size to the two lungs; the aorta and all the other structures in the mediastinum were matted together in the mass. The wonder was that pressure symptoms had not been marked before death.

Both cases presented greatly enlarged mesenteric glands. In one side of the abdomen of one of the children was a mass of glands as big as the fist, which might well have been taken for a malignant tumor.

TWO CASES OF CHOLECYSTECTOMY.*

By I. S. STONE, M. D.,

Washington, D. C.

Case I.—Mrs. E., white, age 45, a patient of Dr. Hammond's, had been operated upon previously by the reporter for suspected carcinoma of the uterus; vaginal hysterectomy was done in April, 1901. Since that time she has had fairly good health until in February last, when she had symptoms of what she thought was "grippe," but without the catarrhal symptoms. At this time she was attended by Dr. O. M. Muncaster, in the absence of Dr. Hammond.

Dr. Muncaster was called April 16. She complained of constant pain and fulness in the region of her liver, pain in her stomach, and very frequent nausea; distress in the region of her

Reported, with specimens, to the Medical Society May 9, 1906.

kidneys, and irregular and painful actions of the bowels. She said the pain in her liver and stomach have often been so severe that her doctor had to keep her under the influence of strong doses of morphine. She was very weak and somewhat jaundiced. Dr. Muncaster gave her tonics, sulpho-lithin, and regulated her diet. She improved so much that she was quite comfortable for a few days, but was afterwards taken with severe pain in her liver and stomach. Her family physician having returned, took charge of her, and called Dr. Stone in consultation. He advised an operation.

She had indigestion and had had what might be called nervous dyspepsia; rarely nausea or vomiting. Pain was never severe until the last illness, which began a little over three weeks ago, or about that time before our consultation. She had never been jaundiced, nor had severe colic of any kind. At the beginning of the present illness she was about in her usual health, but was very thin and weighed about 90 pounds, dark skinned, but the skin was not pigmented. Her tongue was not much coated, nor the saliva much changed in appearance or quantity. She had none of the characteristic symptoms of acute cholangitis, but had severe pain in the region of the gallbladder, which required morphia for its relief. There was no evidence that she had had fever, and her pulse was of good quality, and, although she was rather frail looking, we thought her an admirable subject for successful operation. On careful examination it was possible to feel a mass which was apparently the gallbladder, but which gave little evidence that we had such a splendid specimen as we herewith present. The right kidney was prolapsed and the liver itself was rather lower than the rib (hepatoptosis).

Operation was performed at Columbia Hospital May 5, and the specimen removed. The gallbladder was about 5½ inches long and 1¾ in diameter; its walls much thickened; it contained six good-sized stones of an irregular shape, larger than hazelnuts, and with many broad facets, showing their long attrition against each other. The patient has done perfectly well.

When examined the gallbladder was found heremetically sealed.

Case II.—July 16, 1905, the reporter was asked to see Mr. R., with Dr. Appleby, of this city, the patient's family physician. Mr. R. was a man of fairly good habits, though somewhat given to much tobacco and gin. He had been in fairly good health and had had no previous illness which could have relation with the present attack. His illness came on rather suddenly, and in fact the similarity to appendicitis was so marked that a diagnosis was not reached until the time of our consultation. He complained of severe pain below the ribs, on the right side, and a mass could easily be felt, which occupied the position of the distended gall

bladder, which is always downward, and often reaches the level of the umbilicus and occasionally that of the crest of the ilium. (Indeed, Lawson Tait has reported one or more instances of such mistaken diagnosis where such a tumor was thought an ovarian tumor.)

The patient's condition was characteristic of empyema of the gallbladder, and he was admitted into Georgetown University Hospital, and operated upon July 20. The only thing to do in such cases, where there is need for drainage, and where the gallbladder is not gangrenous and can be retained, is to leave it for drainage purposes. The patient did very well immediately after the operation for drainage, but the tract failed to close, and we accordingly attempted to ascertain the cause and opened the abdomen a second time. A piece of calculus was discovered, which had been overlooked at the first operation, and we thought now the patient would surely make a good recovery. But after he had left the hospital and had a closed wound for seven weeks, it again opened and the cicatricial tissue to some extent broke down and had a soft, necrosed appearance. We had him brought to the hospital again, and the wound was cauterized without effect. The quantity of bile varied from time to time. On some days the dressings would be saturated and on others the outpour would diminish, and we could feel encouraged only to find a repetition of the same performance.

We operated May 8, 1906, and removed the specimen now presented, which consists of an elongated tube, such as always may be found after a suspension of the gallbladder with drainage for cholecystitis. It contained no stone, and the operation, as in the case reported a few weeks since, was difficult because of the adhesions resulting from the conditions existing at the time of the previous operation. In this case the most important consideration was the discovery of the cause of the persistence of the flow of bile. We had every reason to think the patient in good condition. The necessary investigation was made as usual to learn the condition of the pancreas, the ducts, and the ampulla of Vater, with the conclusion that there was no calculus in any duct, and that the ducts were of normal size and appearance so far as we could observe and palpate them. After removing the peritoneal coat of the cystic duct, we discovered what we have concluded was the cause of the exit of bile from the fistula. In the operation for drainage the gallbladder was drawn up and sutured to the peritoneum.

CASE OF CHOLECYSTECTOMY FOR GALLSTONE.*

By I. S. STONE, M. D.,

Washington, D. C.

Dr. Stone presented a portion of a gallbladder containing a small calculus which had produced the symptoms of a ballvalve stone. The patient, a man, age 40, had had previously an attack of cholecystitis which necessitated operation May 2, 1904. The great distension, pain and inflammatory changes at that time clearly indicated drainage of the gallbladder rather than its removal, and we could find no stone, but it is quite possible that one was overlooked. The patient promptly recovered from the operation, but was afterwards more or less uncomfortable from time to time. He had what appeared to be colicky pains which were very much like those caused by flatulence. In fact he was worse when flatulent, and after any unusual indulgence in eating. During the past year these attacks of pain increased in number and frequency until they assumed the gravity of actual gallstone colic. His physician, Dr. Wynkoop, thought it possible that he had passed a stone during his last attack, only a few days before the recent operation, March 31.

On examination during an attack we could discover the bladder much enlarged; its size diminished after obtaining relief. The patient, a professional man, could easily locate and accurately describe the size and condition of the gallbladder, and there appeared to be no doubt as to the necessity for operation.

Present condition of the patient.—During his recent illness he was confined to bed, and was obliged to take occasional doses of morphia for the severe pain he experienced. He was somewhat nauseated but without vomiting. His tongue was heavily coated, and his skin slightly sallow. There were no symptoms of jaundice, the sallow hue being due to other causes. He had lost considerably in weight and his physical condition was much below normal. His temperature was not much elevated and his pulse was of good volume.

Operation at George Washington University Hospital March 31, 1906. The first incision had been made for drainage only and

*Reported, with specimen, to the Medical Society April 11, 1906.

was outside the *rectus* muscle. This time we decided to remove the gallbladder, and accordingly used a median lateral incision, which gives the best opportunity to reach the cystic duct.

The adhesions which had resulted from the infection preceding the former operation, and from our fixation of the bladder to the abdominal wall, made this a most difficult and tedious operation.

Far more time was occupied in freeing the liver and bladder from the abdominal wall than in all of the other manipulations.

The cystic, hepatic and common ducts were easily located and the cystic duct ligated with double 20-day chromic catgut, about ⅜ inch from the hepatic duct. We tied the artery with the same ligature, and we had no hemorrhage of importance with which to contend. One vessel which supplied the gallbladder from the edge of the liver spurted, and required a ligature. A rubber drain was placed through a stab wound in the old scar, down to the hepatic duct. The incision was then closed with the intention of obtaining entire primary union. The patient had a rise of temperature for some days after operation, then both pulse and temperature assumed normal range. Recovery has been uneventful.

THE VAGINAL *VERSUS* THE ABDOMINAL ROUTE IN PELVIC SURGERY IN WOMEN.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

This subject is by no means a new one, and no doubt some of my listeners marvel at my temerity in presenting at this time one thought to be so threadbare. As reasons for so taxing your patience may be mentioned first, the mortality attending the vaginal route is less ; second, the resulting morbidity is remarkably less ; third, the danger in acute infections is much less ; fourth, the mental and moral tone of the patient, when about to submit to operation, is much superior ; and, fifth, that while the arguments supporting the reasons already mentioned have been heard, the fascination for abdominal section, together with the greater ease attending it, have prevented the substitution of the vaginal section for it.

*Read before the Medical Society May 2, 1906.

Having announced these reasons for making this plea for a more general application of the vaginal route for intraperitoneal as well as some other pelvic work, I will endeavor to emphasize its superiority in various ways, at the same time frankly conceding its inferiority in other conditions.

In a general way, we find women very much averse to submitting to abdominal section, and yet, if they know of vaginal section will offer almost no objection to it. By association with experienced ones, they have become familiar with the pain incident to removal of sutures of silkworm-gut and other non-absorbable materials from about the abdominal incision, the suppuration that occasionally occurs, and the far from unimportant hernia, that may not be discovered or occur until months or even years have followed the operation. The resulting cicatrix, ofttimes a hideous deformity from stretching, lack of proper coaptation, the cross-marks resulting from necrosis from through-and-through sutures, suppuration scars, hernia, etc., is a frequent clinical picture that never loses to its possessor and friends in its degree of hideousness. This knowledge, together with the pain following the peritoneal irritation incident to transperitoneal work, is calculated to deter them from having abdominal section done. The glamour that goes with stupendous operations lends itself, perhaps many times, in deciding to employ the abdominal route. Moreover, as abdominal surgery is, perhaps, the ranking field in surgery, it is just possible the ambition of some may give rise to this *cacoethes chirurgici* by the abdominal route instead of by the vaginal. That the mortality rate of the surgery done by the abdominal route is much higher than that of the vaginal route cannot be gainsaid. This appears as a conspicuous fact if one takes as a class for comparison the conditions that admit of operation by either route. In suppurative processes of the uterine appendages, whether the pus is confined to the Fallopian tubes and ovaries or has encroached upon other structures, statistics show that surgical treatment by the vaginal route is much safer as to life than by the abdominal route. In disposing of pelvic abscess, surely vaginal incision and drainage is far more satisfactory than abdominal section. Unquestionably the lives of many women are saved each year by this procedure that by any other plan of treatment would succumb to shock, peritonitis or toxaemia from the tedious process of prolonged manufacture of

pus, continued virulency of the infective micro-organisms and steady and prolonged absorption of toxines. It is true this procedure will practically never anatomically cure, inasmuch as pathologic changes have occurred in tubes, ovaries, or other tissue that do not undergo retrogressive changes or complete resolution. It is equally true that in about half the cases thus treated symptomatic cure is not established. But then we see temperature and pulse rate drop to normal, albuminuria disappear, and the general condition of the patient rapidly improve. Some weeks or months later a radical or, if you will, conservative operation may be done with the conditions favorable to complete success. If the condition be an acute grafted upon a chronic one, as is so commonly observed in chronic gonorrheal infections of the appendages and uterus, it may be, when operating for pelvic pus, advisable to remove the structures involved that have been for years causing semi-invalidism.

Could the surgeon positively eliminate mixed infection, then the danger of general peritonitis following radical operations in acute adnexal affections by the abdominal route would be appreciably lessened.

Unfortunately, this is impossible. Probably pure gonococcal infection does not thrive well in the general peritoneal cavity, though the virulence of it in this location has oftentimes been noted. By the vaginal route even the possibility of such mixed infection need not deter the skillful gynecological surgeon from operating in acute cases, as the danger of peritoneal contamination is very much less in operating by this route. I would not be understood as considering such radical surgery in acute infections other than in special cases. As a general proposition, suppurative processes limited to the Fallopian tubes and ovaries should receive palliative treatment for one to two weeks to allow death of the infecting agent to occur. This occurrence is readily recognized in all agents except the gonococcus, and fortunately in this such result is not necessary for safe vaginal section with or without radical procedure. By this route there is less disturbance of nature's protective adhesions—the temporary inflammatory diaphragm formed between the general peritoneal cavity and the diseased appendages—and therefore less danger of resulting general peritonitis. The opportunity for the liberal use of gauze for packing or drainage is greater and the subsequent disadvantages

of it less by this route. The section may be made in front of or behind the uterus, or both, for surgery of the appendages, and if hysterectomy is to be done it may be the early part of the operation.

American surgeons did not at first endorse the vaginal ablations made by Jacobs and some French gynecologists, but today these procedures are thoroughly recognized in this country. Today the gonorrhoeal uterus left after adnexal ablation is recognized as a menace to the woman, from the standpoint of morbidity if if not of mortality. The discharges—leucorrhoeal and hemorrhagic—the pain and discomfort from the presence of such condition, are by no means uncommon.

In uterine fibroids not extending above the pelvic brim, and of diameters of less than four inches, the vaginal route affords advantages over the abdominal. Recently I removed fourteen of them from the uterus of a young woman by this route, besides doing curettage and trachelorrhaphy. No doubt every gynecologist accustomed to the employment of this route for intraperitoneal work has done as much. In most cases of retrodisplacement of the uterus demanding surgical treatment this route is preferable. Certainly for shortening round ligaments it is decidedly better than the abdominal. The shock following the employment of the vaginal route is certainly less than that following abdominal section for the same conditions. The opportunity for drainage for pelvic conditions offered by the vaginal route is much superior to that from the abdominal. The after care is simpler and shorter by it than by the abdominal route, and the resulting weakness to the peritoneal supports remarkably less.

Were I not to mention the disadvantages of this route I would feel subject to accusation of making an unfair plea. There is no doubt in my mind that the vaginal route requires more patience and skill on the part of the operator. But I hold that no one should attempt such work without commensurate skill and patience, and therefore these are not arguments against its employment. It is certain that general abdominal exploration is desirable, and many other conditions of or about the vermiform appendix render advisable its removal. It frequently occurs that the disease is not limited to the pelvis. In all these the abdominal route is a necessity and the vaginal is contraindicated.

I feel sure ectopic pregnancy should not be operated on by the vaginal route, though I did it nineteen times. In the radical treatment of cancer of the cervix uteri very little opportunity for the vaginal route for surgical operation is afforded. In extremely early cases vaginal hysterectomy may be applicable. My conception of the disease and its treatment, however, forces the conclusion that ablation by the abdominal route is best, and that the earlier the stage of the condition the more radical should be the abdominal operation. In cancer of the body of the uterus I think the abdominal route for extirpation should be the unvarying rule. Very essential to the employment of the vaginal route is a commodious vagina. Virgins, therefore, are not proper subjects for the vaginal route. As a rule, I would not advise increasing the working space, even in the non-virginal state, by splitting the perineum merely that the vaginal route might be selected rather than the abdominal. An exception I would make to the last two features in cases of pelvic abscess in which, under no condition, should the abdominal route be preferred to the vaginal.

The advantages of the vaginal route in pelvic abscess are so unmistakable that in virgins stretching or incising the hymen is advisable when necessary to secure sufficient working space.

In this paper I have by no means given all the reasons for asking that the vaginal route be employed more commonly and as a routine procedure, rather than the abdominal, for purely pelvic conditions. I have not introduced figures as illustrations, nor have I quoted authorities to support my propositions. I have plainly stated facts, all of which have been proven, and ask that the best interests of suffering women be served, even though greater skill and more patience be required, rather than a simpler procedure be employed that carries with it a higher mortality rate, a greater degree of morbidity and less success, both primarily and secondarily.

Dr. Taber Johnson said that the subject would require a whole evening for debate; it had been often discussed, and is always interesting. He took the ground that the vaginal route is for the benefit of those patients in the class of cases called generally "pus in the pelvis," where the woman is septic and adhesions are plentiful; in these the vaginal route is very much safer. Evacuation of pus by this route does not entail opening the peri-

toneum; the pus sac is securely roofed over and the finger may tear out the whole floor of the sac without invading the abdominal cavity. Many lives are saved in this manner that would be lost by interference by the supravaginal route. The method was formerly condemned as "unsurgical," but its very simplicity is its best argument. The abdominal route and the so-called "complete surgical procedure" are too complicated and protracted for these ill and prostrated women. By the vaginal route a life-saving operation may be done (without an anesthetic, if necessary), and a complete symptomatic cure effected. Experience has shown that recurrences do not result from this procedure, but that in the great majority of cases the patients are actually cured.

In certain cases where the infection (gonococcic for example) spreads by the lymph channels, the abdominal route may be more advantageous.

Women dread a scar, the removal of stitches, the necessity of the abdominal binder, and the possibility of hernia; they will, therefore, submit to a vaginal operation, where the idea of an operation by the abdominal route will not be entertained.

Many conditions also, may be treated by the vagina with far less danger of shock, hemorrhage and damage to intestines or ureters than is encountered by the supravaginal route.

But any man is a fool who proceeds through the vagina in all cases; here is where sound gynecologic judgment is necessary, and here is where no rule may be laid down. Some cases require the vaginal route; others demand the abdominal route.

Dr. I. S. Stone said that he had occupied several positions in regard to the question under discussion. In nearly every national assembly of gynecologists somebody laid down the law about it. He himself had been on both sides of the fence; he had reported a series of 25 cases treated by the vaginal route, with a mortality of 25 per cent. A few years ago he favored the vaginal route for pelvic pus cases, removing the uterus and appendages, but he now knows that he may safely spill a little pus in the pelvis, mop it out, and close the abdomen.

No abdominal operation ought ever be done where streptococcic infection is suspected; otherwise he prefers the abdominal route. Just now he is troubled with a case in the hospital treated by vaginal incision for a pelvic abscess; the sac would not close after prolonged treatment, and finally the abdomen was opened and through-and-through drainage established; there has not been much improvement. Possibly an abdominal operation at the outset might have averted all the trouble in this case.

Dr. Bovée, in closing the discussion, said that when a pelvic infection is not successfully treated by the vaginal route, the tubes are probably infected and they must be removed before the disease process is cured. Dr. Stone's case is probably of this sort. The question to be decided is whether the tubes should be

removed at once, or whether they may be allowed to remain for future interference if it should be necessary. Fifty per cent. of the cases are symptomatically cured by vaginal section alone; and if necessary the more radical measures can later be accomplished by the same route. He, of course, recommends vaginal *incision;* the old vaginal *puncture* is unsurgical and justly condemned.

The treatment of appendicitis and ectopic pregnancy must not be attempted through the vagina; the former is beyond reach and the latter may allow of spreading infection, or retention of clots or other debris in the abdomen where infection may lodge and develop. In streptococcic infection he would do no operation by either route, except that possibly the broad ligament may be opened, simply for drainage.

Operations for the relief of diseased appendages, displacements and adhesions may all be done with more safety to the patient, with less danger of shock and infection, by the vaginal route. But it must always be remembered that operations by this route require more skill and patience on the part of the operator.

CASE OF RESECTION OF ILEUM.*

By I. S. STONE, M. D.,

Washington, D. C.

Dr. Stone reported a case of resection of the ileum for stenosis, which was associated with a large enterolith. The specimen consisted of a section of bowel about five inches in length, with an incision in the middle portion, showing the enterolith in position. The calculus weighs 15 grams.

Mrs. M., the patient, a white woman, was sent into the hospital for pain in the left ovarian region and with symptoms of gastric catarrh, associated with a left nephroptosis. On examination a hard mass was detected in Douglas' cul-de-sac, which could easily be moved about by the examining finger without causing much pain. Her pelvic pain was not very severe, and did not satisfactorily explain her condition, which plainly showed some constitutional defect or some error of nutrition, and we were unable to definitely account for her loss of flesh and strength. We, therefore, thought it best to make an exploratory incision and see the condition of the pelvic and abdominal organs, and if necessary anchor the kidney. We made a correct guess as to the

*Reported, with specimen, to the Medical Society May 2, 1906.

enterolith, and it was removed, along with the stenosed ileum, which (the stenosis) was not suspected. The appendix was adherent very high up, and it was necessary to prolong the incision in order to reach it. We are inclined to the opinion that the appendix may have caused the pain, and that the enterolith may have been innocent of any symptoms, as the patient had not had the usual symptoms of intestinal obstruction.

The section of bowel shows a granular condition, suggestive of tuberculosis, but our examination of the lower half of the abdominal contents failed to show any other evidence of this disease. A section of the specimen will be examined to ascertain the cause of the stenosis.

Dr. Taber Johnson said that he did not understand why resection of the intestine was necessary for the removal of an enterolith; why could not the intestine be opened longitudinally and closed again? That is the procedure in other cases of foreign bodies in the gut.

Dr Stone replied that he had not had time to describe the case in full. Prior to operation no suspicion of intestinal stenosis had been entertained, but two strictures had been found narrowing the lumen of the bowel by one half, including between them the enterolith. There was evidence of tubercular or some other organic change in that portion of the intestine, the exact nature of which will be determined by microscopic examination. As the two strictures were so close together, he thought best to resect that portion of the bowel.

APPENDICITIS AS A CAUSE OF TETANY.*

By GEO. TULLY VAUGHAN, M. D.,

Washington, D. C.

The patient from whom this specimen was taken was a girl 11 years of age, who, for two years, had suffered from recurrent attacks of appendicitis. The history, as obtained from her family and from two or three physicians who attended her, indicated that in each attack she had had tetany; the seizures had consisted of tonic spasms of two or three minutes' duration, affecting the muscles of the face, extremities and body. Finally the diagnosis of appendicitis was made in an attack of abdominal

*Reported, with specimen, to the Medical Society April 11, 1906.

pain, and the patient was referred to Dr. Vaughan ; during his examination she had two tetanic seizures, involving the arm and leg.

An interesting feature of the operation was that at first no appendix could be found ; the caecum was inspected carefully, and the longitudinal band was brought into view for a considerable distance without revealing the appendix. He did, however, find several enlarged glands back of the caecum, which he decided to remove. On splitting the peritoneum and dissecting out the glands the appendix was discovered buried behind the colon. This anatomical arrangement explains why the appendix has remained undiscovered in other cases. Dr. Vaughan had had that embarrassing experience, in common with other surgeons. He would not have found the appendix in this case but for the enlarged glands. The anomalous position of the appendix might be accounted for by assuming that it had become adherent in early fetal life, and that in development the caecum had been drawn down over it, leaving it buried, but invested with peritoneum.

He had never seen appendicitis described as a cause of tetany, but we know that intestinal irritation of one kind or another and gastric affections, irritation, dilatation, etc., cause it. It is also seen in rickets, in exanthemata, and after thyroidectomy. Billroth lost many of his patients from tetany, not tetanus as erroneously reported, after extirpation of the thyroid gland. Dr. Vaughan himself had removed a large goitre only last week from a patient who developed tetany only three hours after the operation, and died in spasms.

Tetanus, we know, is caused by a specific organism ; tetany appears to be due to some toxin, but whether of bacterial origin or not, we do not know. From whatever source, the toxin has an irritant effect upon the motor nervous apparatus, and causes the peculiar spasm.

Three months after the operation he saw the patient whose history is here related, and she had not had a return of the tetany. He asked to be kept informed as to her condition, and three more months have elapsed without report of any tetanic seizures.

He said that Dr. H. D. Fry had reported a case to the Obstetrical and Gynecologicl Society, in which the appendix was behind the peritoneum.

Dr. Chappell asked Dr. Vaughan to state what had been the frequency of the attacks of tetany before the operation; perhaps a sufficient time had not elapsed for the condition to reappear.

Dr. Hooe said that instead of the appendicitis causing the tetany, the same condition that induced the appendicitis may have been the cause of the tetany. We know that constipation very often causes tetany; every case of the disease he has seen has given the history of constipation. The appendix exhibited did not show much evidence of disease, and the attacks of intestinal pain may have been due to constipation, which in turn caused tetany.

Dr. Vaughan said that he was unable to recollect whether his patient suffered from constipation or not; certainly he had seen many cases of appendicitis without constipation. There was no doubt of disease of the appendix as it showed evidence of chronic inflammation; and before the operation, appendicitis had been diagnosticated by three other physicians. In addition to these facts, there had been no symptoms of tetany before the first attack of appendicitis, and the spasmodic seizures accompanied each recurrent attack. Moreover, the appendicitis with tetany recurred every two or three months; six months have now elapsed since the operation without return of either condition.

Dr. S. S. Adams said that there was a question of differential diagnosis involved in the case; was it true tetany, or hysterical motorneurosis? At the same time there seemed to be some question as to the differentiation between tetanus and tetany; are the differences between the two so well marked in adults as in children? He then discussed recent studies in the bacteriology of the two diseases.

Dr. Vaughan, in closing the discussion, replied that some clinicians have held that tetany is a mild form of tetanus, but the general opinion is that tetany is a reflex functional disorder due to some peripheral irritation. The latter was his own view.

TWO CASES OF RESECTION OF INTESTINE WITH RECOVERY OF PATIENTS; ALSO, A CASE OF RUPTURE OF THE INTESTINE.*

By GEORGE TULLY VAUGHAN, M. D.,

Washington, D. C.

Case No. 1 was a carcinoma of the mesentery in a woman referred to him by Dr. A. Behrend. Patient was 63 years old, and the tumor was easily palpable through the abdominal walls.

*Reported, with specimens, to the Medical Society April 18, 1906.

Six feet and seven inches of intestine, including small intestine, caecum, ascending, and one-half of the transverse, colon, were removed and a side-to-side union made with sutures. So much intestine was removed because the tumor involved the mesenteric vessels which supplied a long section of intestine, and the destruction of these vessels in removing the tumor required the removal of the corresponding portion of intestine to avoid gangrene. Patient made a good recovery, but was troubled with diarrhoea, and now, about six months later, has to be careful in her diet to prevent diarrhoea.

CASE NO. 2 was one of gunshot wound of intestine and bladder in a man 23 years old. Laparotomy about four hours after injury. There were ten holes in the small intestine and two in the bladder. Six holes in the intestine were sutured, but a section of gut was so much damaged, having four holes in it with cutting of the mesenteric border, that two inches were resected and the ends united with sutures. One hole in the bladder was sutured, the other was so deep in the pelvis that it could not be reached and sutured. Rather than split the bladder open and suture the bullet hole from the inside, he decided to leave it unclosed and to depend upon permanent catheterization to prevent infection. The abdomen was closed, and a rubber tube left in for drainage, and a soft catheter was introduced into the bladder through the urethra and fixed. The catheter was kept in place three weeks, only removing it every two or three days for cleansing. The patient made a good recovery.

CASE NO. 3 was a man, 55 years old, who had been kicked in the abdomen by a horse. He was not knocked down, and did not think that he was much hurt, though he had some pain and vomited once. When admitted to hospital, four or five hours later, his pulse was 70 and his temperature 97.4. Two hours later his pulse was 78 and temperature 101.6. Diagnosis of ruptured viscus, probably intestine, was made and immediate laparotomy advised. To this the patient would not consent. Death occurred about 60 hours after the injury. Necropsy showed general peritonitis and a rupture of the jejunum on its anterior surface, transverse to the long axis and involving about one-third of the circumference of the gut. An operation as proposed would probably have saved the patient's life.

CASE OF FATAL HEMORRHAGE FROM PERFORATION OF INTESTINE BY A GALLSTONE.*

By A. M. RAY, M. D., and I. S. STONE, M. D.,

Washington, D. C.

Dr. Ray said that January 7 he was called to see Mr. W., white, age 62; of slight build; previous health good; had served thirty years in U. S. army; retired about ten years ago; occupation for the past ten years, watchman. He was sitting in a chair, leaning forward, and pressing his hands against his abdomen; complained of agonizing pain in right hypochondrium radiating toward the stomach; entire body bathed in profuse sweat; very little, if any, nausea; morphia was given, and in a few minutes relieved the pain; the skin and conjunctiva did not show any discoloration, nor did there appear to be any bile pigment in the urine; bowels regularly open; temperature normal; liver normal in size, except to the left, where there was a slight enlargement; the dulness extending below the right ribs and beyond the mammary line; this was tender, but did not give much pain when palpated.

January 8 he was much better, pulse 80, temperature 99; about four o'clock P. M., he had a severe rigor, followed by profuse sweating. There was considerable pain in the region of the liver; temperature 102. Morphia again gave prompt relief to the pain, but nausea and vomiting continued the greater part of the night. January 9 he was very much better—nausea and vomiting had ceased; bowels acted freely. January 10 he had improved very much; was up and around his house, and was able to take solid food. There was very little, if any, pain in the region of the liver.

My visits then ceased until January 19, when I was called hurriedly about eight P. M., and found that after eating freely of oyster stew, he was suffering from indigestion; while there was some nausea, he did not vomit. January 20 he was sitting up in the morning, but was having some dull pain in the right hypochondriac region. About two o'clock the pain increased, and I

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*Reported, with specimen, to the Medical Society, May 2, 1906.

was about to administer morphia, when he said that he felt as if something had given way, and that the pain was relieved. Two hours later he passed from the bowels about 30 ounces of black coagulated blood, with very little feculent odor. Temperature 98, pulse 120. During the night there were several bloody stools, and some vomiting of blood. The next day he was removed to Georgetown University Hospital, and there placed in the care of Dr. I. S. Stone.

Dr. Stone said that he first saw the patient January 20 in consultation with Drs. Ray and Chappell, the condition was substantially as already described. There was but little to be done for the patient at his own home, and he was therefore sent to the hospital. We observed how much blood had been discharged, how much he had been prostrated, and that he was gradually gaining temporary strength since the last hemorrhage. We had every reason to believe the hemorrhage to have its origin high up within the alimentary canal, or about the duodenum, but offered very little hope of relief unless it were found possible to control the bleeding vessels. Monday, 21st, his condition was almost precisely the same, and it was evident that he must die unless we could find the cause of the hemorrhage. His pulse was very weak, although by proper treatment we had endeavored to improve the action of the heart.

Operation.—He was given light anesthesia, and the abdomen opened through a median lateral incision in the epigastrium, large enough to inspect all of the organs concerned. The dark color of the intestines, characteristic of their appearance when filled with blood, was at once apparent, and we had no difficulty in observing that the whole intestinal tract was filled with semi-solid blood-clot. The contrast of the pallor of the peritoneum, as well as that of nearly all of the body, with the dark appearance of the intestine, was, indeed, striking. At this time, finding that our patient was almost moribund, we gave orders to have immediate transfusion performed while we made a final effort to learn from whence came the fatal hemorrhage. The stomach, duodenum and gallbladder were evidently concerned, because they were fused together by old and firm adhesions, which, in our opinion, were a result of cholecystitis and gall-stone irritation. Before we could unravel the mass of adhesions our patient collapsed, and we, for a short time, assisted in the

efforts being made for the restoration of his pulse. However, all efforts in this direction failed, and we made a rather hurried attempt to obtain the specimen herewith presented, which, however, has unfortuately been allowed to decompose. We had no difficulty in finding the location of the bleeding vessels as we removed the intestinal tract involved. A communication was found between the gallbladder and duodenum large enough to admit the whole index finger. This opening was located about three inches below the pylorus. A large gallstone was found at this point, which had not yet escaped into the bowel. Continuing our investigation, we discovered a well established, and not very old, communication between the gallbladder and along behind the omentum into the transverse colon at the hepatic flexure. This perforation is oval in shape, and would admit the end of the index finger. We infer that a calculus had also passed out of the gallbladder in a downward direction, and had been guarded by adhesive inflammation between coils of intestine and omentum and other peritoneal surfaces on its way to the large bowel just mentioned. We were not able to ascertain the relation of the two perforations, and why they occurred nearly at the same time, but that they were both of recent origin we had abundant proof.

Dr. T. C. Smith said that within a year he had lost a similar case. A lady suffered with several attacks of hepatic colic, none very severe. Later, however, she was seized with a most intense pain, soon followed by collapse, and rapidly fatal peritonitis. Dr. Ford Thompson had seen this patient with him, but she had already become too ill for operative intervention. There was no autopsy, but there could be no doubt as to the diagnosis. Dr. Smith emphatically expressed the opinion that in this day there is less danger from removing calculi from the gallbladder and the kidney than from allowing them to remain. As the profession has come to recognize that appendicitis demands prompt and early operation, so also we must recognize the necessity for prompt surgical intervention in hepatic colic, even if the attacks seem to be mild.

Dr. Bovée inquired as to the location of the perforation, and whether the intestine had been perforated from without inward or from within outward.

Dr. Stone replied that there was some uncertainty, both as to the sequence and the mechanism of the pathologic events; he could only state that as there were two separate perforations, the probable explanation is that a calculus passed from the gallbladder

through the anterior surface of the duodenum, and that a second stone perforated into the transverse colon.

Dr. Bovée, resuming, said that we know with all certainty that calculi do pass through the gallbladder wall into various portions of the intestinal tract. When large calculi escape from the gallbladder, in the majority of instances the escape is not effected through the ducts, but by perforation into the duodenum four inches below the stomach. He had seen one case of intestinal obstruction from an enterolith, the nucleus of which was a large biliary calculus; these calculi are often the nuclei of enteroliths, and where intestinal obstruction occurs an enterolith is at fault, and not calculi alone.

Dr. Chappell said that he had seen the case under discussion in consultation with Dr. Ray, after hemorrhage had occurred. The history of hepatic colic was quite clear; there was a mass in the right upper quadrant of the abdomen, easily palpable; no jaundice was observed. The condition was such that he thought a surgeon should be consulted, and so advised. He and Dr. Ray were puzzled to account for the hemorrhage; they had not known of gallstones producing intestinal bleeding, and could not find any reference to such a cause of the condition in the literature at their command. They had made the diagnosis of duodenal perforation on their own responsibility; the question as to whether it was due to ulcer or a gallstone was left undecided. The history of this case illustrates the necessity of calling in the surgeon early when gallstone colic is recognized.

Dr. S. S. Adams asked if the progress of a gallstone from the gallbladder into the intestine is not by slow ulcerative process? And under such circumstances would hemorrhage be as active as in the case reported? If the stone was found in the gallbladder at the operation, was the ulceration and hemorrhage occasioned by this stone or was it due to some other disease of the duodenum?

Dr. Stone, in closing the discussion, said that Dr. Ray had very carefully watched the case just reported and had properly treated it. Dr. Stone indorsed the idea of immediate surgical intervention in hepatic colic, but believed that the profession in general has not recognized the importance and wisdom of this procedure.

In reply to Dr. Adams, he said that the gallbladder was certainly ulcerated and perforated, but whether the track from gallbladder to bowel was made by a stone or by the burrowing of pus, he could not decide. His opinion is that the condition was caused either by stone associated with duodenal cancer or by cancer alone. The patient's age and the circumstance of such severe hemorrhage are facts that justify the suspicion of malignancy.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 11, 1906.—Dr. J. Dudley Morgan, President, in the chair; about 60 members present.

The Chair announced the receipt of photographs and biographical sketches of Dr. Joshua Riley and Dr. John C. Riley, for the use of the Historical Committee.

A letter from the President of the Washington Homoeopathic Medical Society was read; the communication requested the appointment of a committee to confer with a committee of five from that organization to consider pending legislation affecting the common interests of the medical profession. The Chair appointed Drs. Sowers, S. S. Adams, Hickling, Nichols and Sterling Ruffin the committee.

Dr. Vaughan reported the following case, and presented the specimen: Appendicitis as a cause of tetany. Discussed by Drs. Chappell, Hooe and S. S. Adams. See page 176.

Dr. D. S. Lamb presented specimens of tuberculosis. Discussed by Dr. J. D. Thomas. See page 163.

Dr. I. S. Stone presented a specimen of gallstone, with the history of the case. See page 168.

Dr. F. P. Vale read the paper for the evening. Subject: "Clinical and experimental experience with colloidal silver and virulent streptoccocus." Discussed by Drs. Brown Miller and Chappell.

Wednesday, April 18.—Dr. Frank Leech, Vice President, in the chair; about 50 members present.

Dr. S. S. Adams announced the death of Dr. Louis Mackall.

Dr. Sowers, for the Executive Committee, reported the status of pending legislation.

Dr. Vaughan presented specimens as follows: 1st, Cancer of the intestine, resection of six feet of gut; and, 2d, Resection of jejunum for gunshot wound. Discussed by Drs. I. S. Stone and W. P. Carr. See page 178.

Dr. Clark read the paper for the evening. Subject: "Korsakow's Psychosis." Discussed by Drs. Hunt, Hough, Taylor, D. S. Lamb and Dewees.

Wednesday, April 25.—Dr. Morgan, President, in the chair; about 56 members present.

Dr. I. S. Stone reported a case of abdominal gestation, and presented the specimen. Discussed by Drs. Brown Miller and Taber Johnson. See page 159.

Dr. J. B. Nichols read the paper for the evening. Subject: "Arteriosclerosis." Discussed by Drs. D. S. Lamb, Claytor, Shute, Rhett and Wilkinson. See page 143.

Wednesday, May 2.—Dr. Morgan, President, in the chair; about 60 members present.

A letter from Dr. Kober was read, inviting the Society to attend the joint meeting of the Association of American Physicians and National Association for the Study and Prevention of Tuberculosis, on Wednesday evening, May 16, and also to attend the other meetings of the Association of American Physicians and of the Tuberculosis Congress. The invitations were accepted, and the regular meeting of the Society for May 16 was ordered to be omitted.

Drs. Ray and I. S. Stone reported a case of fatal hemorrhage from perforation of bowel by a gallstone. Discussed by Drs. D. S. Lamb, T. C. Smith, Bovée, Chappell, Taber Johnson and S. S. Adams. See page 180.

Dr. I. S. Stone presented a specimen of resected portion of ileum, containing an enterolith. See page 175.

Dr. Bovée read the paper for the evening. Subject: "The vaginal *vs.* the abdominal route in pelvic surgery in women." Discussed by Drs. Taber Johnson and I. S. Stone. See page 169.

Wednesday, May 9.—Dr. Morgan, President, in the chair; about 50 members present.

Dr. Sowers, Chairman of the Executive Committee, presented a memorial to Congress, containing a resolution of the Medical Society, protesting against the passage of a bill to regulate the practice of osteopathy, to license osteopathic physicians, etc., in the District of Columbia. The resolution was adopted.

Dr. Hagner, Chairman of Entertainment Committee, reported that Saturday, May 28, would be the most favorable time for the proposed trip to Jamestown on the Norfolk and Washington steamboat. The committee was instructed to perfect plans for

the excursion, with the understanding that no obligation was assumed by the Society itself for the expense of the trip.

Dr. Wm. A. White, Superintendent of the Government Hospital for the Insane, was elected a Member by Invitation.

Drs. Otho M. Muncaster and I. S. Stone reported a case of cholecystectomy, with specimen.

Dr. I. S. Stone reported a case of cholecystotomy followed by cholecystectomy, and one of myomatous uterus, complicated by pregnancy. See page 165.

Dr. James C. McGuire read the paper for the evening. Subject: "Theories of the production and the therapeutic value of the Roentgen rays." Discussed by Drs. Bishop and C. Norman Howard.—Published in *Virginia Medical Semi-Monthly.*

No meeting May 16.

PERJURY FOR PAY. By WILLIS P. KING, M. D., Ex-Chief Assistant Surgeon of the Missouri Pacific System. Kansas City: THE BURTON CO.

This is a book giving the author's experience with damage suits while acting as surgeon for a railroad company. It is written in a colloquial style, and is intended as much for the laity as for the profession. It gives, in a readable way, an account of some of the attempts of fraudulent claimants to extort money from corporations, attempts with which, unfortunately, every medical man is too familiar.

It can hardly be classed as a scientific contribution to a subject beset with many difficulties, but as a record of the experience of one man it has a certain value. It illustrates forcibly the tendency of juries to give verdicts against corporations in the face of evidence which, to the medical mind, is conclusive against the claimant.

While he disagrees with Erichsen's well known opinions on railway spine, his characterization of this eminent surgeon as a "credulous old granny" seems undignified and uncalled-for.

The book is written in a loose and rambling way, and is marred by many errors in proof reading.—EDWARD A. BALLOCH.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
Walter A. Wells, M. D., ... "The Rochambeau."
Murray Galt Motter, A. M., M. D., . . . 1841 Summit Place.

Editorial.

THE HISTORY OF THE MEDICAL SOCIETY.

Photographs.

The subjoined lists of names indicate the present and the deceased members whose photographs have been received by the Historical Committee. Arrangements can be made by which these photographs can be reproduced in groups of eight photographs to a group, at about one dollar a picture, or $8.00 a group, should the Society authorize the work to be done. The desirability of having the likenesses appear in the projected history hardly needs argument.

This matter will be brought before the Society at its next meeting. It is suggested that members not only furnish photographs of themselves, but interest themselves to secure likenesses of deceased or absent members, in order to make the collection as complete as possible. Whatever may be the size of the photograph, it would be reduced, if necessary, to bring it within the group. The better the photograph, the better is its reproduction. But it would be well to remember that in handling photographs in the process of reproducing they run some risk of damage, so that it is desirable that members furnish only such likenesses as would not need to be returned.

Living Members.

Ashford, Mahlon.	Belt, E. O.	Cook, G. W.
Atkinson, W. H.	Bowen, W. S.	Crook, Harrison.
Balloch, E. A.	Boyd, G. W.	Crush, B. Alice.
Barker, H. H.	Bulkley, J. W.	Donnally, H. H.

Eliot, Johnson.
Evans, Warwick.
Gibson, F. E.
Groover, T. A.
Hammett, C. M.
Heiberger, Ida J.
Heinecke, G. B.
Hickling, D. P.
Howard, J. T.
Hunt, P. C.
Johnson, J. T.
Lamb, D. S.
Lamb, I. Haslup.
Leech, Frank.
McArdle, T. E.
Machen, F. S.
Mackall, Louis.
Marshall, Collins.
Mason, E. L.
Mellott, S. W.
Miller, M. E.
Miller, W. L.
Morgan, J. D.
Muncaster, S. B.
Newman, H. M.
Nichols, J. B.
Reyburn, Robert.
Richardson, C. W.
Robbins, H. A.
Ruedy, R. C.
Schneider, F. A.
Simpson, J. C.
Sowers, Z. T.
Staveley, A. L.
Strobel, M. Louise.
Suddarth, J. L.
Thompson, J. Ford.
Thompson, J. Lawn.
Thönssen, W. J. R.
Vaughan, G. T.
Walsh, J. E.
Wilmer, W. H.
Woodward, W. C.
Yarrow, H. C.
Young, P. G.

DECEASED MEMBERS.

Ashford, F. A.
Bliss, D. W.
Boarman, C. V.
Borland, A. J.
Boyle, Cornelius.
Cragin, C. H.
Eliot, Johnson.
Girard, Charles.
Hall, J. C.
Hammett, C. M.
Holston, J. F. G.
Howard, Flodoardo.
Johnston, W. W.
Keyes, C. W.
Mackall, Louis.
Miller, Thomas.
Morgan, E. C.
Morgan, J. E.
Newman, W. G. H.
Riley, John C.
Riley, Joshua.
Snyder, J. M.
Stone, R. K.
Taylor, W. H.
Thompson, Benedict.
Thompson, J. Harry.
Toner, J. M.
Tyler, Grafton.
Young, J. T.
Young, Noble.

PLACES OF MEETING OF THE SOCIETY.

Some buildings in which the Society has met are still standing; as the Medical Hall, 1002–4 F Street, N. W.; the old Medical College, 10th and E, N. W.; Law Department, Georgetown University; American Colonization Building; Patent Office; City Hall; Gilman's Drug Store; Columbian College Assembly Hall, 15th and H, N. W.

But other buildings have disappeared. A list of these, so far as at present known, is herewith printed, in the hope that some members may be able to find old photographs or prints that can be used for the "History." Tennison's Hotel; Strother's Hotel;

McPhail's (also known as Haskill's) School, 16th street, north of St. John's Church; the Washington Library Building, on 11th Street, N. W., south of Pennsylvania Avenue; the building occupied by General Richard Weightman, on 6th Street, N. W., afterwards part of the National Hotel; United States Engine House, where the General Post Office was afterwards built; City Hospital, or Washington Infirmary; Medical Department, Georgetown College, F Street, N. W., east of 12th, south side; Gonzaga Hall, back of the old Saint Patrick's Church.

Records of Members.

It is very desirable that members who have not yet sent the required information to the Historical Committee, should do so without delay. The Committee cannot otherwise be held accountable for mistakes that may appear.

The desired information includes the *full* name; date and place of birth; year in and college from which graduated in medicine; similar information in regard to any other degrees; official positions in Army, Navy or Marine Hospital service; and if a biographical sketch has been published, the name, place and date of publication.

THE BOSTON MEETING OF THE A. M. A.

When one bewildered member declared "Why, this is worse than a four-ring circus!" he meant no discourtesy either to the Association or to its lavish hosts, the Medical Profession of New England. This serio-comic ejaculation, however, hit off the situation very tersely; there was so much to see and to do that one scarcely knew which way to turn. Never before had there been such a large registration, and, without reflection upon former meetings, never before had there been such full, complete and satisfying arrangements for the pleasure and profit of the members. No little amusement was caused by the fact that many of the excursion tickets were sold "on account of the American Medical Association and the First Church of Christ Scientist." This bringing together of — but, we refrain; any comment would spoil the joke!

A unique feature of the meeting, from the social standpoint,

was the tea, served every afternoon in the court of the noble Harvard Medical School by some of the elect of Boston society. These charming young women, robed in white and bedecked with the Harvard crimson, were, indeed, ministering angels. One poor fellow hurried, but absent-minded, offered his fair waitress a "tip;" his confusion and chagrin when, later, he was informed that this same young lady was the daughter of one of the wealthiest families in Boston, is better imagined than described.

From the professional and scientific standpoint, there was little that could have been desired; the section meetings were well attended; the exhibits, scientific and clinical, were rich and fruitful; while the lantern demonstrations were, many of them, unique. Above all and through all and in all, there was a spirit of enthusiasm, unity and harmony which was the strongest possible endorsement of the present policy of the Association, and the best possible evidence of better things yet to come for the medical profession of America.—M. G. M.

GLANDULAE SUPRARENALES SICCAE.

Under this title the Pharmacopoeia recognizes a powder prepared from the suprarenal glands of the sheep or ox. The blood-pressure raising constituent of these glands has been marketed under a number of names, such as *adnephrin*, *adrenaline*, *epinephrine*, *epirenan*, *hemisine*, *paranephrin*, *suprarenalin*, *suprarenin*, etc.

In October, 1905, Dr. W. C. Fowler used adrenalin chloride in a case of variola hemorrhagica, seen at the local smallpox hospital; the patient, however, was moribund. Since December, 1905, as reported in the March number of the ANNALS, Dr. Llewellyn Eliot has used the remedy in four cases of this type of smallpox; three of the patients died, the fourth had a protracted convalescence. It is interesting to note that in this case "every point of eruption upon the body necrosed, some points were arrested superficially, while others, principally those upon the thighs and legs, became deep sloughs of greater or less size, and the toes of each foot became gangrenous. Each point of sloughing was surrounded by an elevated broad border of pus, a distinct line of demarkation."

Maragliano reports (Abst. *Jour. A. M. A.*, 12 V, '06, p. 1485), as a result of his observations, that adrenalin seems to enhance the virulence of staphylococci, and concludes "that its effect on diseased or inflamed tissues is liable to be disastrous." He cites a dental case in which, after the injection of cocain and adrenalin for perialveolitis, there followed necrosis of the soft parts injected and a fatal pyemia.

Several months ago the writer, while suffering from a severe, acute coryza, used, by means of an atomizer, two applications of this medicament dissolved, with aromatics, in an oily base. Whether *propter hoc* or simply *post hoc*, there followed within twenty-four hours a lively purulent infection of the accessory cavities, which yielded only to vigorous treatment, continued for a week.

In the light of these cases, Maragliano's caution, based upon clinical and experimental observations, that "the use of adrenalin should be limited to sound tissues," may be worthy of consideration.—M. G. M.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from May 1, 1905, to June 1, 1905, and the same period of 1906, in the District of Columbia.

Diphtheria.

1905.			1906.		
Cases on hand May 1	15		Cases on hand May 1	25	
Cases reported from May 1, to June 1	30		Cases reported from May 1, to June 1	27	
Cases discharged, recoveries		31	Cases discharged, recoveries		41
Cases discharged, deaths		4	Cases discharged, deaths		2
Cases on hand June 1		10	Cases on hand June 1		9
Total cases	45	45	Total cases	52	52
* Per cent. of fatal cases		11.4	* Per cent. of fatal cases		4.6

Scarlet Fever.

1905.			1906.		
Cases on hand May 1	54		Cases on hand May 1	28	
Cases reported from May 1, to June 1	35		Cases reported from May 1, to June 1	40	
Cases discharged, recoveries		45	Cases discharged, recoveries		21
Cases discharged, deaths		3	Cases discharged, deaths		2
Cases on hand June 1		41	Cases on hand June 1		45
Total cases	89	89	Total cases	68	68
* Per cent. of fatal cases		6.2	* Per cent. of fatal cases		8.7

Typhoid Fever.

1905.			1906.		
Cases on hand May 1	27		Cases on hand May 1	43	
Cases reported from May 1, to June 1	28		Cases reported from May 1, to June 1	45	
Cases discharged, recoveries		22	Cases discharged, recoveries		32
Cases discharged, deaths		2	Cases discharged, deaths		8
Cases on hand June 1		31	Cases on hand June 1		48
Total cases	55	55	Total cases	88	88
* Per cent. of fatal cases		8.3	* Per cent. of fatal cases		20

Smallpox.

1905.			1906.		
Cases on hand May 1	2		Cases on hand May 1	2	
Cases reported from May 1, to June 1	15		Cases reported from May 1, to June 1	35	
Cases discharged, recoveries		2	Cases discharged, recoveries		9
Cases discharged, deaths		0	Cases discharged, deaths		1
Cases on hand June 1		15	Cases on hand June 1		27
Total cases	17	17	Total cases	37	37
* Per cent. of fatal cases		00	* Per cent. of fatal cases		10

* The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD, *Health Officer.*

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WASHINGTON
MEDICAL ANNALS

SUBCONJUNCTIVAL INJECTIONS IN DISEASES OF THE EYE.*

By ROBERT SCOTT LAMB, M. D.,

Washington, D. C.

Although not new, the subject of subconjunctival injections is of considerable interest, because as yet the use of these injections in the treatment of diseases of the eye has not been widely adopted, and because of the excellent results of such therapy in the hands of those having used this means of treating diseases of the eye.

So far as I have been able to ascertain, Rothmund, of Munich, was the first (in 1866), to use subconjunctival injections, having made injections of aqueous solutions of sodium chloride for the purpose of absorbing the exudates remaining after the active inflammatory symptoms in interstitial keratitis, and was the first to propose the use, similarly, of alcohol and chloroform to provoke an irritant action.

Donders, however, in 1857, had stated that solutions of hydrochloric acid 1-500 to 1-20,000, when kept in contact with the cornea, would increase the volume of the cornea, and that stronger or weaker solutions would not do it, the maximum being obtained with a 1-3,000 and 1-5,000 solution, and Rothmund is supposed to have reasoned from that as to the possibilities of a sodium chloride solution on the corneal opacities when injected under the conjunctiva.

Gamba, of Turin, in 1872, suggested sodium sulphate, an agent that had been used in collyria by De Luca and Castorani; de Wecker, of Paris, in 1887, proposed injections of sodium chloride in detachment of the retina and solutions of cocaine for operations upon the eye and in the orbit.

*Read before the Medical Society May 23, 1906.

G. Secondi and Gallenga, Turin, 1886, proposed injections of sublimate in syphilitic irido-cyclitis and infected abscess of the cornea. Secondi thought that by injecting sublimate in the capsule of Tenon the antiseptic would thereby be brought in contact, through the lymphatics, with every part of the eye and surrounding affected parts.

Together they made some clinical observations. It remained, however, for Darier, a pupil of Abadie, to make the greatest number of injections of various substances and in other diseases than those mentioned, of the greatest variety and with most remarkable results. And it is to these observations, made over a period from 1888 to 1894, that the oculists of the world turned for information and support when they undertook the use of medicines subconjunctivally for the treatment of ocular affections.

Since 1894 hundreds of ophthalmologists have used these injections experimenting on animals and in clinics, and their written observations cover so much that I will only mention the names of some of the earlier and more notable ones, and the substances used by them: Pflüger, iodine trichloride, flouorescine; Bossalino, quinine bichloride on the rabbit; V. Sicherer, sodium cinnamate; Mellinger, calcium chloride and potassium iodide; Richter, oxygen water and hydroxylamin; Van Moll, potassium salicylate; Katzaouror, sodium hydrochlorate; Reymond, sublimate; Dor. Ext. of Ciliary Body in beginning lens opacities and sympathetic ophthalmia; Coppez, of Brussels, antitoxin in diphtheria; and Darier, antitoxin of Marmorek in rheumatic iritis.

In our own country, Briggs, 1894, de Schweinitz and Veasey, of Philadelphia, and Roy, of Atlanta, Ga., in 1896, wrote articles reviewing this subject and adding personal experiences with the injections.

It is not my wish to tire you with a long history of this method of treatment, and I have therefore appended a table of reference for those who may be interested to pursue this subject farther than the limits of this paper.

Be it understood, then, that my object in bringing before you this subject is to stimulate interest in what seems to me to be of vital importance in the treatment of ocular affections, and yet has been allowed a careless and indifferent place among the therapeutic means used by most oculists.

There is in modern therapy a tendency towards more exact methods, the giving of more accurate doses of drugs, and resorting to surgery whenever advisable, and of restricting so far as possible therapeutic means to affected parts rather than deluging the entire system with drugs given through the mouth and stomach, and expecting them to arrive later on at some remote part of the anatomy, there to purge the locality of its ailment. At a glance, then, it seems better to use therapy locally to the affected part, and that has been done with excellent results in diseases of the eye by the administration subconjunctivally of various substances in solution.

In order that we may understand why the solutions are injected instead of being placed in contact with the conjunctiva to be absorbed, let me recall to your minds that the lymphatics of the cojunctiva drain in to the lymphatic channels of the face and into the preauricular, parotid, submaxillary and digastric lymphatic glands; whereas, the solutions to be effective must pass through the lymphatic spaces, channels and vessels of the coats of the eye, there to come in contact with the disordered tissues and carry away effete materials, to the zygomatic or internal maxillary and post pharyngeal lymphatic glands.

The technique is simple; after cocainizing, raise with forceps, or, as I prefer, the point of a needle, a part of the conjunctiva, selecting if possible, the external angular region above or below the check ligament, thrust the needle tangentially to the globe through the conjunctiva into the subjunctival connective tissue, where the looseness of the meshwork facilitates the absorption of the solution injected into the tissue from the hypodermic syringe attached to the needle. If pain be anticipated, acoin may be added to the solution in proper amount and strength, or ice may be at hand for application immediately after the injection.

The modus operandi has been much discussed, and for a long time the osmotic theory of the action of certain chemical solutions had the most advocates, but today I think it is generally believed that these solutions act by flushing the lymphatic vessels, and thus allowing new and more nutritious lymph to flow through the lymphatic channels and spaces of the coats of the eye. However, no one has positively proved that no benefit is derived from the action of the different chemical components of the various substances and we may yet find that cyanide of

mercury is indispensable as an antiseptic and antisyphilitic, and perhaps some other agents are superior to the normal salt.

After trying the various solutions proposed by one or another operator for antisepsis, or because of the selective affinity of a drug for a certain condition—as strychnine for atrophy of the optic nerve, sodium salicylate for rheumatic lesions, or cyanide of mercury for syphilitic manifestations—it is now my practice to use for injection normal salt solutions, almost exclusively, because of their comparative freedom from pain or irritation, or the tendency to the formation of adhesions between the conjunctiva and sclera, and of the rapid absorbability and nutritive action, together with the fact that patients raise absolutely no objection to them ; whereas, in the use of other solutions patients often complain of pain, and ice applications have to be used for some minutes to control the pain.

It being true that the eye is so dependent upon the character of the nutritive material carried by its blood and lymph vascular channels that the slightest impurity therein contained causes a proportionate loss of vision, it follows that any means that brings a higher nutritive value in the contained blood or lymph is a beneficial means, ardently to be worked for, and much to be praised when found. I think that in subconjunctival injections we have such means.

Whether the biochemic or biomechanic explanation is accepted, the essential thing for us to remember is that we have at least the flushing of the drainage channels, thereby allowing fresher and healthier material to refill them and give succor to the hungry, impoverished, damaged cells of the diseased tissues.

Naturally, then, the eye being so absolutely dependent on its vascular supply for preservation of its normal functions, we would expect that many of the diseases of the eye might be favorably influenced by subconjunctival injections, and that the indications for their use would be many. This is what we find, for there is not a tissue and hardly a disease which has not come in for a share of careful experimentation with these injections in order that they might find their proper place among therapeutic measures.

The indications for their use are so many that it would be impossible for me to fully describe them within a reasonable time, but I would like to present the following :

In serious infections of traumatic or operative origin they are better, quicker and surer than other methods. In suspected infections, before pus formation, they are salutary and prophylactic. In sympathetic ophthalmia they are very beneficial in addition to mercury frictions. In infected corneal ulcer they bring about rapid resolution and lessen the scar. In recent macular choroiditis they sometimes restore vision perfectly. In optic atrophy, beginning, where the fibers have been compressed and weakened but not destroyed, as they are in tabes. In optic neuritis, acute imflammatory, not due to intracranial affections. In traumatic iritis, irido-cyclitis and irido-choroiditis. In iritis of syphilitic origin, with or without gumma they are helpful adjuvants to general treatment. In hemorrhagic retinitis for absorption of the hemorrhages. In simple retinitis for their salutary action.

In a word, they are indicated in infections, acute or chronic, primary or secondary, from without the body or through the blood and lymph, as rheumatic, syphilitic or tubercular.

They are contraindicated by venous and lymphatic stasis, as they cannot properly traverse the superficial channels to get to the deep ones ; but if the superficial channels be cleared by the use of dionin and hot applications, then the injections may be given.

They undoubtedly have their drawbacks, being sometimes painful, and not well received by the patient, owing, perhaps, to faulty technic, and again to venous and lymphatic stasis being present, and causing marked chemosis when the solution is injected. Neither of these has happened in my work lately, although frequent enough at the beginning of it, and I take this opportunity to request persistent trials with this means by any one using it before desisting, as the earlier results, because of inexperienced manipulation or judgment, may be more or less unsatisfactory.

I would have appended a number of cases treated by me with subconjunctival injections of normal salt solution, cyanide of mercury, sodium iodide and other agents, together with any other therapeutic means indicated in the particular case suffering with the disease, but it would only weary you, and I will, therefore, only mention the diseases in which I have used these injections. Phlyctenular conjunctivitis and circumcorneal hypertrophy ; infected and non-infected ulcers of the cornea, with and without

hypopion; interstitial and phlyctenular keratitis; herpes of cornea accompanying herpes zoster ophthalmicus; episcleritis and scleritis; in traumatic cataract, with rupture of the capsule; after discission operation and after cataract extraction, to absorb the cortical substance, in syphilitic iritis, with or without gummata, and in rheumatic iritis; irido-cyclitis, and irido-choroiditis; macular choroiditis and disseminated choroiditis; retinitis, simple and hemorrhagic; neuro-retinitis; neuritis; beginning atrophy of optic nerve; glaucoma; sympathetic ophthalmia and panophthalmitis.

In conclusion, let me not be understood as saying that every patient suffering with any of the above-mentioned diseases should be treated by subconjunctival injections at any or all stages of the progress of the diseases; but, that this means of administering therapeutic agents is a most valuable aid in treating any of these diseases, if used thoughtfully and with the same care and discretion that should characterize our best endeavors to accomplish a cure.

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Discussion.

Dr. Butler said that he had had no personal experience with the method advocated by Dr. Lamb, and that his knowledge of the results obtained by it came entirely from the literature. Dr. Lamb had mentioned a great variety of conditions in which the technic is said to be indicated, and he regretted that Dr. Lamb had not specified the results obtained at his hands in individual cases. Fox, of Philadelphia, has tabulated 430 cases in which subconjunctival injections of various agents were used; his experience caused him to discard all agents except sodium saccharate and weak solutions of sodium chloride. He concludes that saccharinated soda is preferable in most cases to sodium chloride; that it must be given in the capsule of Tenon and at rare intervals.

His further conclusion is that the method is best adapted to the treatment of corneal scars, interstitial keratitis, vitreous opacities —diseases of the anterior region of the eye.

Speaking for himself, Dr. Butler said that he prefers less painful and less dangerous modes of treatment where applicable. In many conditions, no matter what local measures are employed, no cure will be effected without general tonic treatment.

In view of the statement of Dr. Knapp, of New York, that no case of detached retina is ever completely cured, the assertion that subconjunctival injections will cure it is going rather far.

Dr. O. Wilkinson said that from 1896 to 1898 he had done considerable experimental work with subconjunctival injections. In the New Orleans Infirmary he had experimented with saline solutions combined with the administration of mercurials. Since then he has continued to employ the method occasionally, and has

obtained no good results in deep inflammations of the eye and little in superficial ones. The method may be of benefit in certain syphilitic cases, but the results are no better than under ordinary treatment; infusions alone produce no good effects whatever.

Dr. Dye said that he had had no personal experience with subconjunctival injections, but he had seen Dr. Lamb's work, and wished to say that in some instances the results have been brilliant. Dr. Dye thought that perhaps others who have been disappointed with the method have not had sufficient experience or practice in its employment. He has seen good results from the technic in Dr. Lamb's hands, both in superficial and deep ocular lesions.

Dr. Lamb thanked Dr. Dye for his complimentary remarks. With regard to Dr. Wilkinson's statement that he had obtained good results with the method in certain cases and no results in others, Dr. Lamb desired to point out that the injections had been used in conjunction with other treatment in Dr. Wilkinson's experiments and that the credit for improvement could not be definitely placed.

Dr. Lamb himself had seen most positive benefit result from the method in deep ocular disease, results not otherwise obtainable. For instance, in acute optic atrophy it is not often that the vision is so restored that the patient may recognize friends across the street, yet just that result had been obtained in the case mentioned by him; although under treatment only a few weeks, this patient now wants to go to work. Dr. Lamb had had other serious cases in which quite as marked benefit was obtained.

DERMATOLOGICAL REVIEW.*

By SAMUEL FRY, M. D.,

Washington, D. C.

X-Ray.—During the past year the literature on this subject has presented little that is novel, interesting, or of practical value. Dalous and Lasserre[1] conclude as a result of experiment that the basilar and germinating layers of the skin are more easily affected than those of the columnar or squamous variety; therefore, the microscopical findings as to the predominating type of cells in a neoplasm will form a tangible basis for the prognosis. Boggs[2] advises against its use in trivial diseases, not only on account of the expense, but because he has noticed that even comparatively short and infrequent exposures have resulted

*Read before the Medical Society May 30, 1906.

in persistent pigmentations and telangiectasis, which are more lasting and disfiguring than the acne cured.

Vose and Howe[3] observe as one of the results of X-ray exposure an augmenting of elastic tissue. According to many pathologists this tissue is diminished in keloidal lesions. Stover[4] cites a case of rebellious hyperidrosis of axillae—approximately two quarts daily—which yielded to two series of X-ray treatments; slight erythema, pigmentation and falling of hair followed in sequence, and normal conditions were finally resumed. Dupeyrac[5] regards the beneficence of the rays in tinea tonsurans, trichophytosis barbae and favus as due to effectively cleansing the site by dipilatory action, and not parasiticidal power. Hutchinson[6] believes that unskillful exposure of the skin to X-rays can produce epithelioma.

Wise[6½] in a recent article concludes as follows:

1. The X-ray will cure ringworm and favus of the hairy skin more rapidly and reliably than any other method of treatment * * *.

2. Hypertrichosis should be treated by electrolysis, not with the X-ray.

3. The X-ray gives very satisfactory results in the various forms of cutaneous tuberculosis; in keloid, in keratoses, infiltrated patches of chronic eczema, lichen planus, pityriasis rubra; in the tubercles, ulcers, and tumor-masses of mycosis fungoides, psorospermosis and sarcoma.

4. X-radiation relieves pruritus, burning, tingling and pain; it decreases the discharge and foul odors of various dermatoses, often causing them to completely disappear.

5. In selected cases, radio-therapy is the ideal agent in the treatment of epithelioma and rodent ulcer.

Finsen Light.—Gottheil[7] states that it is very efficient in the treatment of lupus vulgaris and tuberculosis cutis, to which diseases nearly all experimentation has been confined. He believes that when we have institutes like the one in Copenhagen more will be learned of the therapeutic value of this agent. It is exceedingly expensive as to cost of apparatus, amount of electricity used and time consumed in treatment. Only a small area can be subjected to the exposure, and in extensive lesions no one can tell when the sittings will end. The scars are smoother and less conspicuous than those of the X-ray. Franklin[8] and

Jacob[9] report good results ; the latter advises the use of carbolic acid or a 4 per cent. pyrogallol ointment to remove the grosser lesions and the Finsen light to complete the work.

PHOTO-THERAPY.—Steiner[10] finds that reflected light, combined with sulphur or mercurial ointment, gives results in the treatment of eczema, sycosis, acne and other skin diseases better than is ordinarily obtained by the use of either agent alone. Hyperemia is increased—by the heat rather than the light—and the bactericidal action of the rays supplements the drugs. Motschan[11] cites a case of noma, in a lad of nine, during the course of a pneumonia, treated by constant exposure of the area to a sixteen-candlepower red incandescent electric lamp, and nothing else. Pain and odor soon disappeared, the necrotic tissue was cast off and recovery ensued. Sokolow, in 1900, described a case similar in every respect.

RADIUM.—Abbe[12] in his recent complete exposition of this rare substance, made it clear why so little is mined or produced and why, aside from the financial feature, it is so hard to obtain. He has shown in a wonderfully effective manner that it is a power for good in cancerous and warty growths, especially those of a superficial type. He believes that its penetrating rays, which no substance seems capable of deflecting, cause a disintegration of malignant cells. He expresses the opinion that an antitoxin is formed at the same time, and this, distributed via the same channels by which metastasis has occurred, has a resolvent effect on infected glands remote from the primary lesion.

SUNLIGHT.—Hirschberg[13] has experimented on superficial cancers—one lesion on his own ear, and unyielding to usual caustics—and deduces from results that in high altitudes, where the intensity of the sun's rays are not diminished, the actinic ultra-violet factor is equal in every respect to that produced by lamps.

LIQUID AIR.—Trimble[14] says there can be no doubt as to the beneficial effect of liquid air in cases of epithelioma, lupus and pigmented and hairy naevi. It is applied by dipping a piece of gauze wrapped about the end of a small stick of wood into the liquid. The excess is allowed to drip off and the saturated gauze is applied to the lesion by light, medium or hard pressure. Light pressure causes a slight reaction and inflammation, as needed in lupus erythematosus ; medium pressure produces a superficial

slough, as for a hairy mole, while hard pressure will develop a deep slough, as is sometimes needed in epithelioma. The application is painless as anesthesia is produced by the intense cold, and the resulting scars are eminently satisfactory from a surgical and cosmetic viewpoint. The expense of the liquid is reduced by the introduction of the Dewar's container—a flask inside of a larger one, and the interspace a vacuum—from which evaporation occurs only one-fifth as fast as from an ordinary vessel. The applications are made once a week, and three or four usually effect a cure.

PSORIASIS.—Gottheil (l. c.) does not like the "shot-gun" method ordinarily practiced in the treatment of psoriasis, that is combining the grease, soap and medicament of several kinds in a salve to be indifferently applied. He says the scales should be removed, benzine or carbona used to dissolve the fatty matter, and then a hand-scrub with green soap and hot water should be vigorously applied. The remedial agent should be used in increasing strengths, and should be rubbed in well with an ordinary stencil brush. His choice of drugs is tar (purified oil of birch), chrysarobin and pyrogallol in the order named. On the face white precipitate is advised. Internal medication is preferably hypodermatic injections of arsenic in ascending doses.

INFANTILE ECZEMA.—Hall[15] in an exhaustive study of sixty cases of infantile eczema shows that cold and exposure have much influence as causative factors, and gastro-intestinal disturbances very little.

MEASLES.—Hektoen,[16] by treating blood drawn from two patients with measles with ascites broth in an incubator for twenty-four hours, and injecting 4 cc. of this fluid under the skin of two adults who had never had the disease, produced the usual symptoms and rash. In one case the catarrhal manifestations were absent. The conclusion is drawn that the virus of measles is in the blood, and that it will retain its virulence for twenty-four hours under favorable conditions.

UNCINARIASIS.—Claude A. Smith[17] has proven experimentally that uncinariasis enters the system through the skin, and that the dermatitis produced by rubbing the skin with soil mixed with four-days-old larvae is similar in every respect to the so-called ground itch.

SYPHILIS.—Regarding the discovery of the specific organism

of syphilis by Schaudinn and Hoffmann, Lassar[18] remarked during the discussion following the reading of their paper that "125 causes of syphilis have been established during the last twenty-five years." Castellani[19] had found a very similar, if not the identical protozoon in eleven out of fourteen cases of "yaws" in Ceylon.

1. *Annales de Derm —Jnl. A. M. A.*, 7-29-'05, p. 359.
2. *St. Louis Med. Review*, 3-18-'05.—*Am. Jnl. of Sci.*, 12-'05, p. 1111.
3. *Jnl. of Med. Research*, 1-'05.
4. *Arch. of Physiological Therapy*, 4-'05.
5. *Marseilles Med.*, No. 6, '05, p. 173.—*Am. Jnl., Med. Sci.*, 11-'05, p. 923.
6. *American Medicine*, 2-3-'06.
6½. *Medical Record*, Jan. 20, '06.
7. *Progressive Medicine*, 9-'05.
8. *Medical News*, 12-31-'04.
9. *Medical Electrology and Radiology*, 11-'04.
10. *Münch. med. Wochen.—Jnl. A. M. A.*, 6, 17-'05, p. 1970.
11. *Berl. klin. Wochen*, '04, Nos. 21 and 22.—*Progressive Med.*, 9-'05.
12. Demonstration before Society.
13. *Berl. klin. Woch.*, '05, No. 41.—*Merck's Arch.*, 1-'06, p. 26.
14. *Medical Record*, 7-8-'05.
15. *Brit. Jnl. Derm.*, 5 to 8-'05—*Interstate Med. Jnl.*, 1-'06.
16. *Jnl. Infect. Dis.—Interstate Med. Jnl.*, 1-'06.
17. *Jnl. A. M. A.*, '05, p. 1143.—*Interstate Med. Jnl.*, 1-'06.
18. Mook, *St. Louis Med. Review*, 2-3-'06.
19. *Jnl. A. M. A.*, 3-24-'06, p. 920.

Discussion.

Dr. McGuire said that he had little to say beyond congratulating Dr. Fry upon his contribution. Dr. McGuire wished, however, to take exception to the statement that no substance can deflect the radium ray. He had recently shown in a paper that the alpha and beta rays are both deflected in the magnetic field: the alpha rays, slightly, the beta rays, greatly.

In regard to the treatment of acne by cupping, on the principle of the Gorman treatment of inflammations by passive hyperaemia, he said that he had used the method in one case but was unable to determine whether the benefit was derived from the cupping or from other treatment.

He had recently successfully treated furuncles by electrolysis. The negative needle was inserted into the hair follicle, whereupon the hydrogen evolved swept out the inflammatory debris; then introducing the positive needle, oxygen was generated and acted as an efficient disinfectant. The operation was somewhat painful but successful in the most obstinate cases. He had cured a carbuncle, about the size of a half-dollar, by this method.

In two cases of psoriasis he had effected a cure with X-ray treatment. In one case the ordinary chrysarobin treatment was used on one side, and while the condition was relieved it was not yet

well; the other side was entirely well under X-ray treatment alone. He had used the X-ray in the treatment of two cases of varicose veins; and in this connection he stated that a careful search of the literature had failed to reveal any record of the use of this method by anyone else. One of his cases was now well and the other almost cured.

Dr. Fry, in closing the discussion, said that his statement as to the non-deflectability of radium rays was with regard to material objects. Dr. Robert Abbe in his recent address to this Society had seemed to demonstrate this fact.

SURGERY, A REVIEW.*

By WM. A. JACK, Jr.,

Washington, D. C.

In looking over the literature on this subject one is struck by the fact that, in spite of the enormous amount of work being done throughout the world, very little that is new has been brought forward.

By this statement I do not intend to convey the impression that there has been no progress in surgery, for there has been a great deal in the past year. This progress has been along the lines of improvement in technic, rather than any startling development, such as Lister's discovery of the principles of antiseptic surgery.

The great problem of cancer is still a reproach to the profession, although the family physician now sends these cases to the surgeon earlier than formerly, and the individual has a better chance of recovery. Coley, of New York, is still working with his mixed toxins of erysipelas and prodigiosus, and has obtained marvellous results in some cases of inoperable sarcoma. Several men have reported results that are little short of marvellous from the use of radium for the various forms of cancer. If these results can be obtained by others it deserves an extended trial, but I would limit the application of this wonder worker to inoperable cases because it sometimes fails, and it is then too late for extirpation. If half of the wonderful results claimed for this remedy are true, it should not be difficult for any one to prove for himself on some of the old cases of cancer that are so plentiful in every community.

*Read before the Medical Society May 23, 1906.

The search for a safe anesthetic still goes on, the latest candidate for our consideration being subdural injections of a 25 per cent. solution of magnesium sulphate. The disadvantage of this method is its slowness of action, anesthesia not being complete, even in favorable cases, in less than three-fourths of an hour.

Great things were predicted for the scopolamine-morphine method of anesthesia, but it has been more or less of a disappointment on account of its slow action and the fact that several deaths have been directly attributed to it.

The use of nitrous oxide gas before ether is at present the safest method, although the gas can be replaced by ethyl chloride, or one of the many patented mixtures of ethyl chloride with other volatile substances. The ethyl chloride method has the great advantage of portability over the nitrous oxide.

The past year has seen the gradual abandonment of mechanical aids in favor of simple sutures in anastomosis of different portions of the intestinal tube. The mechanical devices still have their advocates and a certain place in cases in which time is a factor for a successful outcome.

The twine triangular stitch of Maury deserves mention as a substitute for the McGraw elastic ligature. The advantage of twine over the elastic is that the twine is always at hand and is not subject to deterioration from age, as in the case of the elastic.

Among the many operations that have been brought to the attention of the profession in the past year I shall mention only a few that have seemed to me to embody something essentially new.

The work of Murphy, of Chicago, on ankylosed joints, wherein he shows that it is feasible to divide the bones by means of a saw or narrow chisel, then turn in a flap of fascia, and thus secure a movable joint, appeals with special force to me on account of the deplorable condition of so many individuals with this deformity. In fact, I believe that if this procedure was generally followed in these cases we would have many more useful limbs which now are a standing reproach to the art of surgery.

Another procedure brought out by Murphy is that of subcutaneous exarticular wiring of fractures of the olecranon. We have all seen these cases that have been treated by splints of various kinds, and also by open incisions, with very poor results as regards motion, for the reason that usually the incision and

wiring are postponed until after failure to get union by the use of the splint, the reason of such delay being the fear of sepsis on account of the necessity of opening the joint to introduce the wire sutures. Murphy's method can be done by any one with a fair knowledge of anatomy and an aseptic conscience.

This operation is exceedingly simple, and consists of passing a fine wire through the lower fragment up under the skin and through the upper fragment. A detailed description will be found in *The Journal American Medical Association.*

Nearly all of us have at times had great difficulty in covering with skin the large area left after a radical operation for cancer of the breast. This can now be obviated if the flap devised by Jabez N. Jackson be used. In his article in *The Journal American Medical Association* he claims to be the originator of the method of severing the tendons of the pectoral muscles and removing the axillary glands and fat before touching the main tumor. I must take issue with him on this, as I saw E. A. Balloch do the operation in this manner ten years ago, and he is still doing it, and he says that he got the idea from Willy Meyer. But full credit must be given Jackson for his ingeniously devised flap and the small incision necessary to sever the tendons and remove the glands and fat. The time necessary to extirpate a breast and suture the wound in this method need never be over an hour, and in a debilitated patient this matter of time is an important item.

The upper abdomen, thanks to the work of Moynihan and the Mayo brothers, is no longer the unknown field that it was a few years ago.

Many patients who were formerly actually drugged to death are now, and particularly so in the past year, relieved of their suffering and live useful lives after having their gastric ulcers treated by gastro-enterostomy and their gallstones removed or an infected bladder drained.

To go over every new surgical procedure would take time, and so I have merely given an outline of these things that have appealed especially to me.

Dr. Jas. F. Mitchell said that he had enjoyed Dr. Jack's paper exceedingly. Contributions of this sort are most useful in calling the attention of the entire profession to the significant points of progress in the various special branches of medical science. It is to be remarked that few entirely new things come out in the

course of a year; new discoveries are rare, but each year contributes progress towards perfecting the technic of old procedures. Some work in experimental surgery has been very important, however, notably the work in Chicago on visceral and blood-vascular transplantation.

The problem of the treatment of aneurysm has received an impetus by the introduction of the method of gradual obliteration of vessels by silver bands. Some wonderful results have been obtained in the treatment of aneurysms of the aorta by this method.

The work of Rogers and Beebe on the serum treatment of exophthalmic goitre promises great results. Proceeding upon the Ehrlich side-chain theory, they have inoculated Belgian hares with thyroid emulsion from exophthalmic patients and later have given the serum from the hares to the patients. Rogers has tried the method with brilliant results. A patient of Dr. Mitchell, who had been operated on three times with recurrences had been benefited by the serum. They have found that each exophthalmic gland seems to produce its own specific serum; a serum resulting from inoculation with thyroid emulsion from one patient will not influence another. Thus the method will require that the gland, or a portion of it, must be removed from each patient, emulsified, injected into hares, and a special serum thus obtained for each individual case.

In the past year the greatest progress has been made, and the greatest results obtained, in the surgical-pathological laboratory.

Dr. Jack, in closing the discussion, said that as the work on exophthalmic goitre has been entirely experimental no mention was made of it. Ligation of the sympathetic nerve has been productive of little good. The serum treatment seems to offer the most hope. As the method thus far is so complicated and expensive, the best procedure at present seems to be complete extirpation of the gland, with after administration of thyroid extract.

MEMORIAL MEETING OF THE MEDICAL SOCIETY, WEDNESDAY, JUNE 13, 1906, IN HONOR OF THE LATE DR. LOUIS MACKALL.

Dr. Jas. Dudley Morgan, the President, said that this meeting had been called for the purpose of honoring the memory of a distinguished member of the Society, now deceased, Dr. Louis Mackall, and introduced Dr. S. S. Adams, Chairman of the Committee appointed to arrange the program.

DR. LOUIS MACKALL.

Dr. Adams said that on March 28 the Society had adopted a resolution presented by Dr. D. S. Lamb in compliment to Dr. Mackall upon the attainment of his seventy-fifth year of age and the fiftieth year of membership in the Society. A committee, consisting of Drs. G. Wythe Cook, D .S. Lamb and himself, had been appointed at the same time to arrange for some fitting celebration by the Society of these anniversaries. It was found that Dr. Mackall's health was such as to preclude the immediate consum-

mation of these plans, and soon thereafter the sad news of his death was announced to the Society. The same Committee which had hoped to arrange to do honor to Dr. Mackall himself was instructed, April 18, to arrange for this meeting to do honor to his memory.

The President, said: The rupture of the ties by death of one generation from another poignantly sharpens the acuteness of the grief and loss and cruelly separates us from an old friend and counsellor who had become wise through learning and through years.

Dr. Louis Mackall had just celebrated his golden jubilee in the practice of his noble profession when the summons of his Creator came. He was a man of exceptionally kind and gentle manner, well trained and wise in the profession of his choice, a most agreeable and cultured associate, possessing great skill in physical diagnosis. He was ready to work and uphold the dignity of his profession, and in former years we found him often present with us in our debates, being a ready, pleasant and instructive talker. One of the many notable special committees of the Medical Society of the District of Columbia upon which he served and which was composed of Thomas Antisell, Thomas Miller, Louis Mackall and J. M. Toner, issued a report which was published in 1871 by the Society "Upon the claims of irregular practitioners for professional recognition in the medical service of the United States Government. * * *"

It may be said of him, as of the evangelist, he was a "beloved physician," and his name and reputation will live on to be honored and referred to as a man who led a Christian and noble life and who went about helping and healing the sick—"To live in hearts we leave behind is not to die."

Dr. A. A. Snyder spoke as follows of *Dr. Mackall as Man and Citizen*: It is indeed fitting that the Medical Society of the District of Columbia should take recognition of the death of Dr. Louis Mackall, late its oldest surviving active member; a more than passing notice of one who has taken a keen and active interest in the doings and welfare of this Society through such a long period of years, seeking always to advance its interests for good, coercing its progress along planes to higher scientific attainments and the improvement of its members professionally, socially, and in friendly affection.

It will take a keener wit than I possess to do justice to the memory of Dr. Louis Mackall, but to recall the many attributes of the quiet, courteous gentleman is a pleasure which many of us present have. Having lived all my life a close neighbor to Dr. Mackall, I have been fortunate to witness the influence this quiet, genial man has had on those about him, and which was extended through the community in which he lived and worked. The love and affection of his home life, with its tinge of romance, was ideal, because no husband could have been more true, more tender, more considerate ; no father with his high sense of integrity and his strict regard for uprightness could have held his family about the hearth-stone with a warmer love of the family ties. Though mild and inoffensive in his manner, he inherited from his Scotch ancestors a firm sense of right and a hard sense of justice ; though always open to argument and conviction, his strong mind once made up was with difficulty changed. He was never light-minded or frivolous himself, he considered all men to be serious as himself ; still, at the same time, a pleasant expression or a happy event brought a smile to his face that gave a glow to those in his presence.

He was not a man of effusive cordiality, and on that account his friendship was the more highly prized by those who possessed it, and any praise spoken in his low, mellow tones was merited, and the receiver felt the reward.

Having descended from a long line of educated persons, his father before him being a man of note in the medical profession, Dr. Mackall was a studious and a remarkably well read man, particularly in the line of his profession, in which he always kept thoroughly abreast of the times, and this, with his remarkable diagnostic faculty, rendering the diagnosis clear and the lesions plain, made him a strong man in his own locality and extended the knowledge of his abilities far beyond the sphere of a more than ordinary practitioner.

For many years he took more than the usual interest in the public institutions of the District of Columbia, especially giving his interest, his abilities and his work to the hospitals—Providence, Columbia, Garfield and Emergency Hospitals—to which he was actively attached, aiding them with his knowledge and advice as well as with his hands and broad experience ; and those institutions owe much of their success and advancement to the labors

of love of Dr. Mackall. Probably of more importance than these positions held by him was the fact that he was for a long period a professor in the Medical Department of Georgetown University, occupying the chairs of Professor of Clinical Medicine and also of Physiology. Not only was he an internist of mark but he was also a surgeon of ability—at one time was offered the position of surgeon to Providence Hospital; but for many years past he turned his back to the fascinations of surgery.

His interest in the younger men of the profession was perennial, and no young man ever met Dr. Mackall in consultation but he was cordially entertained, his history carefully listened to, his opinions thoughtfully considered and advice or suggestions freely and sincerely given him. He was never slighted, belittled or damned with faint praise by Dr. Mackall. It is also true that Dr. Mackall could differ in opinion and could object to a line of treatment, but it was done after the manner of a strong man with strong, firm convictions, and, backed by Scotch inheritance, there was no disguising it. When he had an opinion he possessed it!

No man ever accused Dr. Mackall of "commercialism," or ever thought that he would descend to such unprofessional business, for, as a gentleman and of the old school of the practice of medicine, he was without such traits.

The Medical Society of the District of Columbia has grown large, and many of its members did not know Dr. Louis Mackall, but I tell them that they have sustained a loss; that a man has gone from their midst; that I mourn for him!*

Dr. George M. Kober addressed the Society as follows upon *Dr. Mackall as Teacher and Professor:* We have met to pay tribute to one of the oldest, one of the best known and most distinguished members of our Society. I have been present on many occasions of a similar character during the past thirty years, but the death of few members has come to me as such a distinct personal sorrow as the loss of Dr. Louis Mackall, because he was my teacher in all that the word signifies—instructor, counsellor, friend.

Those who knew him personally must have been impressed as I was thirty-three years ago with his earnest, thorough and honest character and work. He taught physiology, and one of the

* It is worthy of especial note that Dr. Mackall formalized the plan of having the regular weekly paper read and the discussion.

first attributes of a successful teacher was his clear, scholarly and concise presentation of the subject, which he had mastered and hence had no difficulty in imparting his knowledge to others.

Being engaged in active general practice, he was especially impressed with the importance of applied physiology, and many of his "own paths" remind me of the modern fermentations in the studies of pathologic physiology. He had no difficulty to hold the individual attention of the student body, by pointing out the attractive and fixed principles, and avoiding many of the debatable questions in the subject under discussion. As a result his pupils at the close of the term possessed a remarkable comprehensive knowledge of the fundamentals of physiology, quite free from false theories and half truths which so often perplex and mislead the student's mind.

Dr. Mackall was always kind and courteous, earnest and sympathetic, and inspired his students with the same spirit. It is needless to say that he always commanded respect, and I do not recall a single instance of inattention on the part of any of his listeners.

His charming personality and polished manner, his wonderful memory and well chosen language, uttered by a most attractive and impressive voice, made him an ideal teacher, and could not fail to interest and instruct his students. Nor can I refrain here from declaring that whatever success many of us have attained is due to the precepts and example of Dr. Mackall as a teacher and a man. It was the personality of the man as a friend, guide and counsellor which made a lasting impression upon our youthful and plastic minds. In March, 1873, he delivered the address to the graduating class, and I shall never forget how deeply I was touched by his eloquent and scholarly address, and as it reveals the true character of the man and his conception of the nobility of our calling, I may be pardoned for presenting some of the many striking passages of his masterful oration.

The address contained words of encouragement, words of soberness and seriousness, to impress us with the greatness of the responsibility and obligations, and words of warning lest this rich and honorable inheritance should not be perfected to fruition. He said in part:

"The stern voice of duty bids me to tell you that even on this day you must not wholly lay your armor off, that the injunction is as imperative in medicine as in religion, forgetting the things

which are behind, you must be forever pressing forward toward the mark of the prize of your high calling. I must reiterate, that unless you look upon the work and study of the past three years as but the prelude to and preparation for further efforts and sterner conflicts, you had better never have undertaken the study of medicine. For if you pass out of this place deluded with the idea that the time for study is over, that you can trust to and rest upon these laurels alone, then there is in store for you nothing but certain failure and bitterest disappointment.

"You are now about to be entrusted with all that men hold sacred and most precious—their lives, their confidence and their dearest interests. In accepting this high trust you have obligated yourselves to lead a life of great self denial, of incessant mental and physical labor, and the strictest integrity, morality and honor."

After pointing out the many self denials, the untiring energy and the habit of persistent work which typify the physician's ever restless and busy life, all inspired by an earnest, devoted and ardent love for the profession, he referred to the rewards which the profession has to offer in return for so much sacrifice and devotion, and told us—

"But though you cannot count upon great riches, you may calculate with great certainty upon a competency. My word for it, if you are true to your profession she will be true to you. If you do but cultivate her soil faithfully a plentiful harvest will ever be guaranteed to you. But though she will not promise you wealth, she will give in abundance other things which money cannot buy. She assures you position, the respect and confidence of the rich, the blessings and love of the lowly. * * * And then you will carry about with you the satisfaction of knowing that you are engaged in a noble work, a work whose highest aim is the advancement of truth and practice of beneficence; whose great end is the promotion of the glory of God.

"Gentlemen, before you stands the temple of medicine, venerable in its age, colossal in its dimensions, grand in its magnificence. We have brought you to its portals. We can go with you no farther. But standing there is the Genius of Medicine, ready to explain its mysteries and to display its beauties. With her finger on her lip she admonishes you to reveal neither to wife or child, or friend or professional brother those things which shall be entrusted to you, to be kept locked in the innermost recesses of your soul until the day when the secrets of all hearts shall be revealed. And ere she enters, she points you to her foundation stone, on which are written the words 'honesty and truth.' And though for ages knaves and quacks and, I am sorry to have to add, members of the

profession, too, have been diligently seeking to efface this inscription, yet, blessed be God, the words 'honesty and truth' are as legibly written on this foundation stone as when they were first carved three thousand years ago. Passing under the lintel of the door, again she points to an inscription written there:

> 'A little learning is a dangerous thing,
> Drink deep or taste not the Pierian spring.'

And once within the temple walls, you quickly learn that the colossal structure was reared neither by Anatomist, Physiologist, Pathologist, Chemist, Surgeon or Physican alone, but that each has faithfully discharged the work assigned to him. * * * And as you pass along through her broad aisles you see, ever and anon, long lists of illustrious professors and teachers. But far above the most eminent surgeon and most distinguished professor, you see before you a monument which dazzles you with its brightness and its beauty. Approaching, the Genius stands before it with rapt devotion, and, wondering, you find the explanation in the Greek words which are written there, 'The True Physician:' he who, calm and courageous, stood firm when contagion and disease and death were holding high carnival around him; he who suffered neither 'downy bed or rainy night or slight ailment to stand between him and the sick man dying;' he who scorned to elevate himself by shams or tricks or lies; he who never sought to gain a cheap notoriety by magnifying the disease of the patient; he who never took any unfair advantages over his professional brother; he who, when others around him were seeking to lower the professional standard, only grasped it firmer and firmer, and elevated it higher and higher, and went straight forward in the path of honor and of right; he whose code of medical ethics began and ended in one single precept: 'Do unto others as you would they should do unto you;' he who felt every pang that tortured his unfortunate brother; he who when defeated by his grim adversary, Death, still fought on, and suffered him not to clasp in his cold embrace his patient until he had first disrobed him of his form of terror and veiled him in rays of angelic light.

"Ah, gentlemen, soon you will be eager to rivet upon some office door your freshly painted names. Rather paint upon the tablets of your hearts a picture of 'The True Physician,' and then you will carry about with you a talisman that will lift you almost to the regions of the sublime, when the creatures of lust and passion are seeking to drag you down to their own base level. And now, once more the Genius points you to the single word written on the topmost stone of our temple 'Unfinished.' And as through this unfinished dome she takes her heavenly flight,

> 'To you, to you the spirit cries,
> Rear it upward, upward to the skies!'"

In the class of graduates who listened with rapt attention to the eloquent address of their respected teacher was a young man, a stranger in a strange land, whose heart had been saddened by the melodious music and the contemplation of the fact that, standing upon the threshold of his profession, there were no relatives or friends in the audience whose hearts were beating in unison with his own high hopes. He had just received his diploma, and some thoughtful classmate had directed that one of his numerous floral gifts be handed to this poor lad; indeed everything conspired upon this eventful day to impress this lonely youth with life's stern realities, and the occasion was one of extreme sadness to him, which so overshadowed everything else that it was difficult to control his emotion. In this hour of tribulation, the earnest and impressive words of his beloved teacher brought comfort to his troubled soul and inspired hope and honest resolutions.

Under these circumstances you will appreciate with me the full significance of the loss of such a man to the medical profession and to me personally. He was my benefactor, and I owe him and his memory profound gratitude and respect. He will find his reward in the world beyond, and we are all better for having known him.

Dr. Thomas C. Smith then spoke as follows of *Dr. Mackall as a Member of the Society and Physician:* Dr. Mackall was President of the Medical Society in 1880, but my acquaintance with him began long before that time. It was a privilege to know such a man. His dignified, courteous demeanor bore the stamp of the true gentleman. Those who did not know him have something to regret. His faithfulness to the Society is borne out by the records; for in his prime he was a most regular attendant on the meetings and one of its readiest debaters. He was earnest in his discussion of matters brought before the Society and entered most heartily into the consideration of medical subjects. His wide experience added zest to his enthusiastic zeal, and he was greatly missed when advancing years and impaired health prevented him from attending the meetings. In conversation Dr. Mackall was never guilty of using other than the most refined language, and I have often been impressed with the thought that the man who approached Dr. Mackall should have clean hands and a clean conscience. We have lost a valued member, whose

blameless life is worthy of emulation. He leaves to his family an honorable record and spotless reputation, and to the Medical Society a name worthy to be cherished while honor and uprightness are regarded at their true worth. His patients have lost a wise and skillful physician; his friends a most charming companion. I appreciated his friendship; I deeply deplore his death.

Dr. Robert Reyburn said that he had known Dr. Mackall for a long time, perhaps longer than any other member present, and that he desired to bear witness to the uniform integrity of his life through all these years. He had seen much of Dr. Mackall, but during the whole course of his acquaintance, though there had been occasions to differ in judgment, there had never been occasion to lower his regard for the man whose memory this meeting honors. The contemplation of Dr. Mackall's life led him to remark that as we have known so many men who have attained eminence unsupported by character, and have seen so many who have fallen from honor to dishonor, Dr. Mackall's steadfast adherence to the high ideals of a spotless integrity constitutes the best of legacies to his family and friends.

Dr. I. S. Stone said that he also had known Dr. Mackall for a long time, and even before a personal acquaintanceship had been made he had come to know him by repute, for mention of the profession in Washington then always included the names of Mackall, Lincoln, Busey. And thus he was impressed again with the inevitable outgrowth of reputation from simple worth, for Dr. Mackall was always the most quiet and unassuming of men. A consultation with Dr. Mackall years ago had made a deep impression upon him and had stimulated his regard for the man. All specialists must recognize the frequency with which, when called in consultation, they hurriedly examine the patient, after a brief history from the family physician, and then pronounce a finished verdict as to condition and indication; and every specialist must recognize the ease with which the habit of this procedure is formed. Such a method did not suit Dr. Mackall, however; when he asked for consultation with a specialist, the family which trusted him and depended upon him had a right to a consultation in the full meaning of the word. He accepted no specialist's verdict until both had consulted and agreed upon a course of ac-

tion based upon the "merits of the case." He had been deeply impressed by this position of Dr. Mackall's and respected him for it.

This meeting to do honor to a deceased member of this Society, and the recounting of his history and characteristics, had made Dr. Stone think that the Society ought to have a meeting place of its own; where the histories of departed members could be kept, where the portraits of departed ones could be hung upon the walls, and where, in some recess, perhaps, tablets to those worthy might be erected to make a little "Hall of Fame," where we might come in and think upon the lives and works of the Washington physicians.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, May 23, 1906.—Dr. Jas. Dudley Morgan, President, in the chair; about 40 members present.

Captain Dean C. Howard, Assistant Surgeon, U. S. A., was elected "member by invitation.

A letter from the Red Cross Association asking for donations of books and instruments for the San Francisco physicians was read. The Librarian was authorized to receive and transmit such donations.

Dr. R. S. Lamb read the essay for the evening: "Subconjunctival Injections in Diseases of the Eye." Discussed by Drs. Butler, Wilkinson and Dye. See p. 193.

Dr. Jack read a review of the progress in surgery in the past year. Discussed by Dr. Jas. F. Mitchell. See p. 205.

Wednesday, May 30.—Dr. Morgan, President, in the chair; about 25 members present.

The Treasurer was authorized to expend such amounts as may be necessary to publish the next two numbers of the ANNALS.

Dr. R. S. Lamb presented a patient suffering from *optic atrophy*, who had been treated with subconjunctival injections; a colored man about 40 years old. Six weeks ago he was without light perception, now he walked into the room alone and unguided. Yesterday Dr. Lamb had tested the vision and found that the patient could read from the test card, Jaeger, 16. [The patient read with-

out difficulty from the black-board.] The diagnosis was acute optic neuritis. The man had been treated systematically with strychnia and anti-syphilitic remedies, with no improvement. Dr. Lamb then began to use subconjunctival injections of salt solution, and improvement had been rapid and steady since that treatment was instituted.

Dr. Louise Tayler-Jones read the essay for the evening: "The variations in the fat percentage of mother's milk as a factor in infant feeding. A foreword." Discussed by Drs. Parsons, Chappell and Howard.

Dr. Samuel Fry, read a review of the progress in dermatology in the past year. Discussed by Dr. McGuire. See p. 200.

Wednesday, June 6.—Dr. Morgan, President, in the chair; 47 members present.

Dr. Jas. F. Mitchell reported a case of *ameboid abscess* of the *liver*, with specimens. Discussed by Drs. D. S. Lamb and Behrend.

The patient was a colored man, 22 years of age, who came under Dr. Mitchell's service at Providence Hospital. The interesting features of his history were that during the summer of 1905 he had a sharp attack of dysentery; he was treated at a dispensary in this city and was relieved. The dysentery returned in the winter, and in February intense pain in the region of the liver developed. Amebic dysentery was suspected, but when questioned the patient stated that he had never lived outside of the District of Columbia and had never been in the tropics. An operation was done to relieve a probable amebic abscess of the liver, and about two quarts of typical pus were evacuated from the right lobe. The pus contained very many amebae coli; and mucus obtained from the colon through the rectal tube also contained amebae. Specimens of the amebae from both sources were shown under the microscope.

Dr. D. S. Lamb said that amebic dysentery and hepatic abscess from that source must be very rare in the District; he had never met with a case in his pathological work. Dr. Mitchell's case was particularly interesting on account of the early age of the patient, and on account of the apparent origin of the disease in the District.

Dr. A. Behrend said that he had recently had a case of this

disease in a patient who had never been outside the District. The dysentery persisted for a considerable period and the patient finally died of cancer of the rectum.

Dr. Mitchell also read the paper for the evening. Subject: "Local anaesthesia." Discussed by Drs. Belt, S. S. Adams, C. S. White, Remsburg, Abbe, Clark, and Taber Johnson.

Dr. McGuire reported two cases of varicose veins successfully treated by X-rays.

Wednesday, June 13.—Dr. Morgan, President, in the chair; many members and guests present. A memorial meeting in honor of the late Dr. Louis Mackall. See p. 209.

Dr. S. S. Adams, Chairman of the Committee on the Mackall Memorial, made report. After introductory remarks by the Chair, addresses were made by the following members of the Society: Dr. A. A. Snyder: "Dr. Mackall as Man and Citizen." Dr. Geo. M. Kober: "Dr. Mackall as Teacher and Professor." Dr. T. C. Smith: "Dr. Mackall as Member of the Society and as a Physician." Drs. Robert Reyburn and I. S. Stone made extemporaneous remarks. It was ordered that copies of the addresses and remarks be sent to Dr. Mackall's family.

Special meeting, Saturday, June 30.—Dr. Morgan, President, in the chair; about 25 members present.

The Chair announced that the meeting had been called upon the written request of three members, in accordance with the provision of the Constitution, for the purpose of proposing one or more names of members of the Society to the Justices of the Supreme Court of D. C. for consideration in the appointment of the Board of Education. A letter from Chief Justice Clabaugh stated that such nomination would be considered on July 2.

Drs. H. B. Deale, J. W. Chappell, D. K. Shute, Louis Mackall and S. S. Adams were chosen.

Monday, July 2, Stated meeting.—Dr. Morgan, President, in the chair; about 15 members present.

It was ordered that the regular weekly meetings of the Society be resumed on the first Wednesday of October next.

The Treasurer reported for the previous six months, receipts, $2,461.14; disbursements, $777.91.

On motion of Dr. D. S. Lamb, Robert's Rules of Order were adopted for the ruling of the Society's deliberations where not in conflict with the constitution and by-laws.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
WALTER A. WELLS, M. D., ... "The Rochambeau."
MURRAY GALT MOTTER, A. M., M. D., . . . 1841 Summit Place.

Editorial.

PHOTOGRAPHS OF MEMBERS.

The following is a list to date of photographs received. Members who have not yet sent their photographs are requested to do so.

LIVING MEMBERS.

Ashford, Mahlon.
Atkinson, W. H.
Balloch, E. A.
Barker, H. H.
Belt, E. O.
Bowen, W. S.
Boyd, G. W.
Bulkley, J. W.
Byrns, W. F.
Cook, G. W.
Crook, Harrison.
Crush, B. Alice.
Donnally, H. H.
Eliot, J. L.
Eliot, Johnson.
Evans, Warwick.
Gibson, F. E.
Groover, T. A.
Hammett, C. M.
Heiberger, Ida J.
Heinecke, G. B.
Hickling, D. P.
Howard, J. T.
Hunt, P. C.
Johnson, J. T.
Lamb, D. S.
Lamb, I. Haslup.
Leech, Frank.
Lochboehler, G. J.
McArdle, T. E.
Machen, F. S.
Mackall, Louis.
Marshall, Collins.
Mason, E. L.
Mellott, S. W.
Miller, J. Preston.
Miller, M. E.
Miller, W.L.
Morgan, E. L.
Morgan, F. P.
Morgan, J. D.
Muncaster, S. B.
Newman, H. M.
Nichols, J. B.
Reyburn, Robert.
Richardson, C. W.
Robbins, H. A.
Ruedy, R. C.
Schneider, F. A.
Simpson, J. C.
Sowers, Z. T.

Staveley, A. L.
Strobel, M. Louise.
Suddarth, J. L.
Thompson, J. Ford.
Thompson, J. Lawn.
Thönssen, W. J. R.
Vaughan, G. T.
Walsh, J. E.
Wilmer, W. H.
Woodward, W. C.
Yarrow H. C.

MEMBERS DECEASED OR REMOVED FROM D. C.

Adams, B. B.
Ashford, F. A.
Bliss, D. W.
Boarman, C. V.
Borland, A. J.
Boss, R. D.
Boyle, Cornelius.
Cady, W. F.
Cragin, C. H.
Eliot, Johnson.
Girard, Charles.
Hall, J. C.
Hammett, C. M.
Henning, R. E.
Holston, J. F. G.
Howard, Flodoardo.
Hudson, W. L.
Johnston, W. P.
Johnston, W. W.
Keyes, C. W.
Lee, Alfred H.
Lindsly, Harvey.
Mackall, Louis.
Miller, Thomas.
Morgan, E. C.
Morgan, J. E.
Neale, R. A.
Newman, W. G. H.
Riley, John C.
Riley, Joshua.
Sewall, Thomas.
Snyder, J. M.
Stone, R. K.
Taylor, W. H.
Thompson, Benedict.
Thompson, J. Harry.
Todd, S. J.
Toner, J. M.
Tyler, Grafton.
Whitefoot, R. M.
Young, J. T.
Young, Noble.
Young, P. G.

The Historical Committee desires photographs of the following members of the Society ; it is hoped that members will pay attention to this request.

Truman Abbe.
G. N. Acker.
Arthur C. Adams.
Roy D. Adams.
S. S. Adams.
Edmund B. Addison.
Chas. L. Allen.
G. L. G. Anderson.
Samuel A. Amery.
Thos. Antisell.
Wm. J. Armstrong.
Wm. Arnold.
R. V. Aulick.
Jas. M. Austin.

The Committee also desires further information in regard to Addison, Arnold and Austin. Any member who can give such information is requested to communicate with Dr. Lamb.

Photographs can be handed to any member of the Committee, which consists of Drs. A. F. A. King, D. S. Lamb, C. W. Franzoni, G. W. Cook and R. T. Holden.

RECORDS OF MEMBERS.

It is very desirable that members who have not yet sent the required information to the Historical Committee, should do so

without delay. The Committee cannot otherwise be held accountable for mistakes that may appear.

The desired information includes the *full* name, date and place of birth; year in and college from which graduated in medicine; similar information in regard to any other degrees; official positions in Army, Navy or Marine Hospital service; and if a biographical sketch has been published, the name, place and date of publication.

MEDICAL EDUCATION.

The proceedings of the Association of American Medical Colleges, the Council on Medical Education of the American Medical Association, and the National Confederation of State Medical Examining and Licensing Boards present much food for thought, and particularly to those who are directly engaged in medical teaching. That the future progress and advancement of the profession must be sought through the more thorough and conscientious education of its members, both *in esse* and *in posse*, is a well recognized fact. It is significant that much of the discussion now turns upon the question of preliminary education and the relation between the academic and the professional or scientific schools. Some one has said, it is not so much the number of facts he knows as how much a fact he proves himself that marks the man. This principle seems to be coming to the fore, and it is recognized that not merely knowledge but training is the great desideratum, training which shall develop character as well as technical skill.

One of the greatest difficulties, especially from an economic standpoint, lies in the time necessarily consumed in acquiring this training. Among the remedies proposed has been the granting of advanced standing to graduates in the arts, but the privileges thus granted have been abused, and the statutory laws in many States, which require four years of medical study, have placed a bar on these abuses. Recently the so-called combined course has come into vogue, and certain institutions offer the student the A. B., or B. S., and M. D. degrees in six or seven years; but even here there is a certain element of danger, if not of injustice. The practical working out of this scheme tends to develop a sort of monopoly for a few favored universities; while the smaller colleges, those which are not affiliated with a univer-

sity, are deprived of the benefits thereof, and great have been the heartburnings in consequence.

Unless all signs fail, the next decade or two will witness something very like a revolution in our medical educational methods. One thing to be thankful for is the broader horizon of those who are now seeking a solution of these problems. As was remarked at the Chicago Conference in May: "The troubles in the whole question of medical education are that it has always been a local question, and I conceive it to be the greatest possible boon to education that your Council has been created and that you are doing such epoch-making work to overcome this fault and to make medical education in this country a truly national question."

The three chief factors which will settle this question are, in the order of their relative power, the organized profession, the State boards and the medical schools. What the profession demands it may get through organized harmony of action. It can dictate the personnel of the State boards and the latter can compel the schools to fall into line. The widespread publication of the percentage results attained by the graduates of the various schools before the State boards throughout the country, will have a most salutary effect upon the schools: those which are honest and sincere will strengthen their weaknesses, those which are not will soon be eliminated.

The next step toward the production of that united harmony of action which is essential will be the elimination of professional sectarianism, and, when the two subjects of therapeutics and practice are eliminated from State board examinations, this will have been well-nigh accomplished. Pharmacology and pharmacodynamics should be developed as fundamental sciences, while materia medica and therapeutics should be looked upon as more or less minor specialties which the individual may cultivate as to him seems best. M. G. M.

MORTALITY IN COMMUNICABLE DISEASES.

The memorandum from the Health Office, page 228 of this number of the Annals, shows a very striking contrast in mortality in the four communicable diseases reported. The highest per cent. in diphtheria was 4.17, in scarlet fever 4.62, and in smallpox 0.0, while in typhoid fever it was 28.32, and last year 26.39. Here is a large field for improvement.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The next meeting of the Mississippi Valley Medical Association will be held at Hot Springs, Arkansas, November 6, 7 and 8, 1906, under the presidency of Dr. J. H. Carstens, of Detroit, Mich. The annual addresses will be delivered by Dr. Frank Parsons Norbury, Jacksonville, Ill., in Medicine, and by Dr. Florus F. Lawrence, of Columbus, Ohio, in surgery.

The program can be obtained from Dr. H. E. Tilley, 111 West Kentucky St., Louisville, Ky.

INDEPENDENT MEDICAL JOURNALISM.

Much has been written of late upon this subject. Judging by the specimens which have come to our table it would seem that the "independent" journals, so self-styled, are those whose chief income would seem to be derived from the manufacturers of proprietaries of somewhat more than questionable therapeutic value; while the dependent journals, so designated by the other fellows, are those which have thrown the ranks of the proprietors into confusion by simply insisting upon the publication of the truth as to their products.

Recently one of the jaundiced members of the St. Louis tribe published an editorial diatribe against this crusade for truth, and we were promptly informed, with the utmost condescension, "You may use the article entire or such portions of it as you may choose." No, thank you, Brother, we are not in that business just yet! We do not have to interlard our pages with vermillion inserts lauding the virtues of "Mansetto," "Mathkarmon" "Hyco-Gleroin," *et id omne genus.*

With apologies to the shade of President Lincoln, anybody who likes that sort of journalism would, no doubt, find that sort of a journal very interesting; but, for the very acme of egotistic-journalistic "hot air," we commend you to the Chicago species. A recent issue of a so-called medical journal from the "Windy City," one which is characterized by column after column of machine-made, cash-paid schemes of symptomatic treatment, based upon anything but pathologic indications, was "personally mailed" to us and promptly followed up with a letter from which we quote this delicious bit:

"One of America's foremost men, one who meritoriously holds (and for years has held) a position of honor and trust among the highest possible in the gift of the profession, writes us as follows:

"'My dear Doctor: I was so much impressed with your personality, when meeting you in Boston, that I have since subscribed for your journal.'

"While the rank and file, the general practitioner—the real 'man with the musket'—fairly floods us with praise for helpfulness."

To illustrate the scientific acumen of the patrons of this *vade mecum*, and the $-brand of advice offered, we append a sample query with its answer:

"Query 0987654321.—Is it cephalalgia or onychogryposis? My wife's condition has given me much anxiety, she loses her appetite immediately after a hearty meal and can never get to sleep before 8.30 P. M.; she wakens at 9 A. M. and can not close her eyes again before breakfast, which we have at 9.15. When she gets up she has an irresistible desire to wash her face, and nothing can prevent her from brushing her teeth. Six months ago I took her to the Costum Pereal Sanitorium, where Dr. Printer's Ink performed a gastro-appendicostomy in eight minutes and nine seconds. Since this time she has always walked with her toes turned in, and is overwhelmed with the fear that the eminent specialist removed her fornix cerebri at the time of the operation. She is now taking a pint of Mrs. Soothlow's Winning Syrup before each meal (a sample case was sent me last week) and three grains of morphine at bedtime. Have you any suggestions to make?"

"You do not tell us what the patient looks like. Is her hair red or green? Has she gold fillings in her front teeth? Does she wear psauriasis shoes? Have you counted her eyelashes? Is she always thirsty when she has not had a drink for twenty-four hours? These are all vital points in the diagnosis, but on further investigation we are sure you will find that her genu reflex is gone and there is a hirsute growth in each axiliary space. By all means make a Widal test, to see if there is *Balantidium coli* in the lymph spaces. We do not believe in the mosquito theory of the transmission of yellow fever and malaria, but the Trendelenburg position, maintained for forty-three hours each day will relieve the paronychia, and a daily vaginal douche with one of the new whirlwind never-got-caught-yet syringes (see advertising page 34) will make her feel like a new woman. Meantime give her one one-hundredth of a grain of calcium sulfid, in divided doses, every three weeks and one-nineteenth of a grain of ciclan-

dine, every five minutes. (We will send you a gold mounted, twelve-vial, pocket case of our active-principle granules, the latest edition of our world-celebrated pocket cyclopedia. "A Drug for Every Symptom," a clinical thermometer and a fountain pen—together with one year's subscription to *The Albumoidal Digest*—total value, twenty-eight dollars and sixteen cents—for three postage stamps.) Discontinue the Winning Syrup, Mrs. Soothlow discontinued her "ad" last month and we have not had any results from this remedy for the past four weeks; we think it has been very much over-rated. The treatment we have just outlined has never failed. Now, let us hear from you soon; we like your way of getting at a case and the clear and terse way in which you describe the symptoms. Such contributions are of inestimable value to our numerous readers, and we are grateful thus to share the fruits of your wide experience and keen, practical wisdom." M. G. M.

Dr. Parke G. Young died July 30, 1906, in his fifty-sixth year. A further notice of his death will appear after the Society shall have resumed its meetings.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from June 1, 1905, to August 1, 1905, and the same period of 1906, in the District of Columbia.

Diphtheria.

1905.			1906.		
Cases on hand June 1	10		Cases on hand June 1	9	
Cases reported from June 1, to Aug. 1	24		Cases reported from June 1, to Aug. 1	22	
Cases discharged, recoveries		28	Cases discharged, recoveries		23
Cases discharged, deaths		1	Cases discharged, deaths		1
Cases on hand Aug. 1		5	Cases on hand Aug. 1		7
Total cases	34	34	Total cases	31	31
* Per cent. of fatal cases		3.04	* Per cent. of fatal cases		4.17

Scarlet Fever.

1905.			1906.		
Cases on hand June 1	41		Cases on hand June 1	45	
Cases reported from June 1, to Aug. 1	30		Cases reported from June 1, to Aug. 1	25	
Cases discharged, recoveries,		62	Cases discharged, recoveries		58
Cases discharged, deaths		3	Cases discharged, deaths		2
Cases on hand Aug. 1		6	Cases on hand Aug. 1		10
Total cases	71	71	Total cases	70	70
* Per cent. of fatal cases		4.62	* Per cent. of fatal cases		3.33

Typhoid Fever.

1905.			1906.		
Cases on hand June 1	31		Cases on hand June 1	48	
Cases reported from June 1, to Aug. 1	169		Cases reported from June 1, to Aug. 1	242	
Cases discharged, recoveries,		53	Cases discharged, recoveries		81
Cases discharged, deaths		19	Cases discharged, deaths		32
Cases on hand Aug. 1		128	Cases on hand Aug. 1		177
Total cases	200	200	Total cases	290	290
* Per cent. of fatal cases		26.39	* Per cent. of fatal cases		28 32

Smallpox.

1905.			1906.		
Cases on hand June 1	15		Cases on hand June 1	27	
Cases reported from June 1, to Aug. 1	12		Cases reported from June 1, to Aug. 1	6	
Cases discharged, recoveries,		17	Cases discharged, recoveries		33
Cases discharged, deaths		0	Cases discharged, deaths		0
Cases on hand Aug. 1		10	Cases on hand Aug. 1		0
Total cases	27	27	Total cases	33	33
* Per cent. of fatal cases		00	* Per cent. of fatal cases		00

* The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD, *Health Officer.*

Report of the results of the July, 1906, Examination for Registration of Physicians in the District of Columbia:

George Washington University:
1903—71.56.
1905—71.73.
1906—65.92, 68.53, 72.89, 73.71, 74.26, 76.25, 77.60, 78.01, 78.62, 78.92, 80,57, 80.77, 81.14, 81.79, 82.77, 84.38, 85.02, 86.19, 88.01, 94.09.
Georgetown University:
1905—66.31, 92.69.
1906—84.00, 87.48.
Howard University:
1905—80.14.
1906—85.87, 89.53.
National University:
1902—32.36.
Baltimore Medical College:
1905—83.10.
University of Virginia:
1906—68.84.
University of Louisville:
1878—74.23.
Hahnemann Medical College:
1904—81.21.
1906—80.52.
Southern Homœopathic Medical College:
1906—64.59.
The average required is 75.

G. C. Ober.

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WASHINGTON MEDICAL ANNALS

THE WALTER REED U. S. ARMY GENERAL HOSPITAL, DISTRICT OF COLUMBIA.*

By MAJOR W. C. BORDEN, Surgeon, U. S. Army.

When I was honored by an invitation to present a paper at this meeting I at first thought I would be obliged to decline, for I had nothing especially new in medicine or surgery to offer. It occurred to me, however, that the members of the Society might like to hear of the new hospital which the Medical Department of the army is to build in the District of Columbia and of the place in medical work it is intended to fill, and upon my suggesting this subject, Dr. Smith was so kind as to say that it would be of sufficient interest to present to the Society.

The Medical Department in much of its work is so separated from the work of the civilian practitioner, and much of the detail to which the medical officer must give his attention is so different from the routine of the civilian phyiscian, that frequently it must necessarily have but little interest to the latter. The permanent establishment in this community, however, of an army general hospital of considerable size, while such hospital does not in any way interfere, or connect with, the work of the civil hospitals, has certain bearings upon the medical and educational interests of the District which can hardly fail to be of moment to the members of this Society.

It will be noted that the establishment which we are considering is designated The Walter Reed U. S. Army General Hospital. Of the reason for naming the hospital after Walter Reed there is hardly need to speak to this Society, all of whose members knew him so well. It is the custom of the service to name army posts after those officers no longer living who have been distinguished in the service. In this Capitol city no more appropriate name could be given to a permanent army general hospital than that of the man much of whose life was spent here, and whose yellow-

*Read before the Medical Society October 3, 1906.

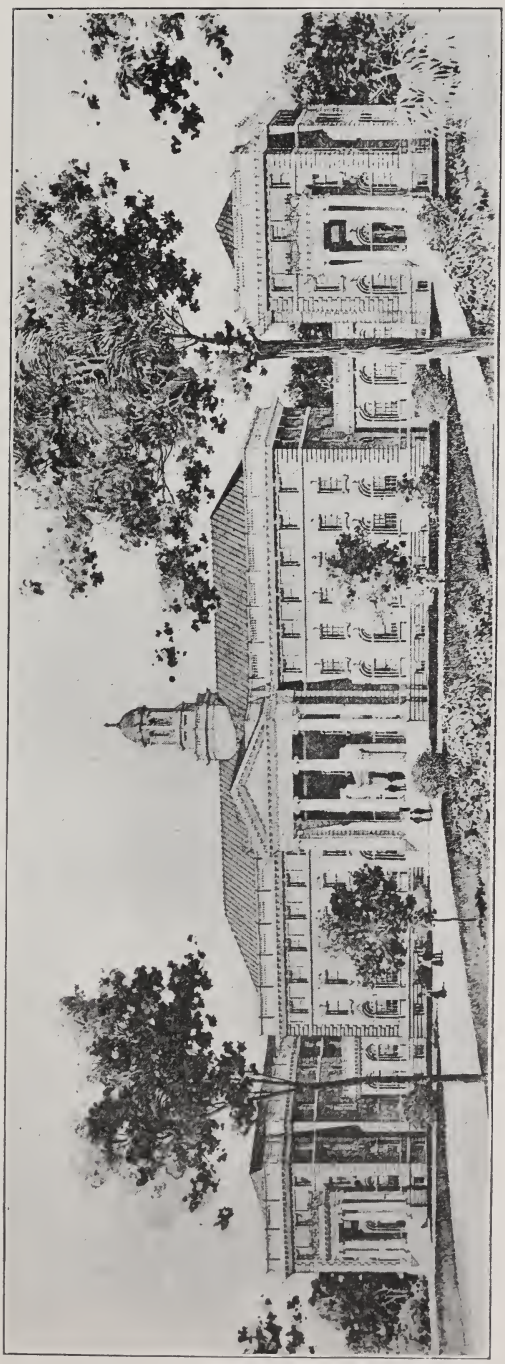
fever work was of such inestimable value to mankind ; while the connection of the hospital with the Army Medical School, in which Dr. Reed so long served as a teacher, makes the name doubly appropriate.

As to the term "general hospital," this has in the military service a special significance, and means, not necessarily a hospital to which all sorts of cases are admitted, but one which is quite directly under the control of the Surgeon-General of the army. The Army Regulations, paragraph 1467, state that "General hospitals will be under the exclusive control of the Surgeon-General and will be governed by such regulations as the Secretary of War may prescribe. The senior surgeon will command the same, and will not be subject to the orders of local commanders other than those of territorial divisions and departments to whom specific delegation of authority may have been made."

Aside from the special hospitals, such as the field hospital established in time of war, there are in the medical service two kinds of hospitals : the post and the general hospital. The post hospital is for the care of the sick of a military post or station, a special building for this purpose being erected at each established military garrison. The post hospitals do not, except in unusual cases, receive any cases from outside nor care for any other than those immediately attached to the station at which the hospital is placed.

The general hospitals, on the other hand, are alike in taking cases from the army at large, the patients being sent to these hospitals under special regulations, and coming not only from stations throughout the United States but from its territorial possessions. There are in the United States at the present time four general hospitals. Of these, two are special hospitals and two are general hospitals, in the accepted medical significance of the term.

Of the special "General Hospitals," one is at Hot Springs, Arkansas, and is for the treatment of such diseases as rheumatism, neuralgia and like troubles, which the waters of the Hot Springs of Arkansas have an established reputation of benefiting, except that cases of venereal disease are not admitted. Admission is restricted to cases of the kind above mentioned, and the hospital is entirely a special one.



The other special hospital is located at Fort Bayard, New Mexico. At this hospital only cases of tuberculosis are admitted, the location, on account of the elevation and dryness of the atmosphere, being particularly adapted to the treatment of pulmonary tuberculosis.

Of the army general hospitals, which are general in the medical acceptance of the term and admit all classes of cases, one is located at the Presidio, San Francisco, California, and the other, the immediate predecessor of the Walter Reed Army General Hospital, is located at Washington Barracks, D. C. Previous to the Spanish-American war there were no general hospitals of this character in the army. During the Spanish-American war, as is usual in time of war, a number of large general hospitals were established, and of these the two above mentioned have been continued since that time. Of the two, the General Hospital at San Francisco is the larger, for the reason that it acts as a receiving hospital for most cases of disease and injury sent from the Philippines. The work done at this hospital has been very great and most creditable.

The other army general hospital for all classes of cases is located at Washington Barracks in this District. As before stated, this hospital is the immediate predecessor of the Walter Reed Hospital, and a brief account of it and the place it fills in the medical department of the army is, therefore, germane to our subject as showing the work which will be carried on in its successor. This hospital was established by General Orders, 140, dated September 8, 1898, which set aside the post hospital at Washington Barracks as a general hospital. This hospital has therefore been in a large way an extemporized one. The post hospital at the barracks was built some fifteen years ago, and, while an excellent example of the post hospital as then built, was not intended for, and therefore could not entirely fill, the requirements of a general hospital. The writer was assigned to the command of this hospital by Special Orders No. 239, dated October 10, 1898. At that time there were over two hundred patients, some of whom occupied the hospital building and others were in tents on the ground near it. With the approach of winter it was necessary to provide better accommodations for those in tents, and two temporary wooden buildings with kitchens and accessory buildings were erected. The hos-

pital also utilized an old hospital building which had not been torn down when the new hospital was erected, and some wooden buildings were put up for use as shops, stable, etc., the whole establishment being of a make-shift nature. The hospital building itself, however, was in good repair, and the operating and sterilizing rooms were put in excellent condition by equipping them with the most modern apparatus. The hospital worked along under these conditions for some time. Soon another feature was added to it. For several years a detachment of enlisted men of the Hospital Corps known as a "Company of Instruction" had been located at Washington Barracks. This company was used as a school for teaching recruits to the Hospital Corps the elements of anatomy, physiology, nursing, Hospital Corps drill and like subjects, in order to equip them for duty as nurses and for the field service required of the Hospital Corps. The Company has also been used in connection with the Army Medical School for instructing the junior medical officers attending the school in Hospital Corps drill, the establishment of field hospitals, and like work connected with the Hospital Corps. It was evident that if the Company of Instruction could be attached to the hospital instead of the post of Washington Barracks, thus making it a part of the hospital organization and so directly under the commanding officer of the hospital, it could then be used for work connected with the Army Medical School without any clash of authority and with the fullest efficiency so far as assignment to duty and instruction were concerned. Therefore, by General Orders No. 3, dated January 8, 1900, the Company of Instruction was transferred from the control of the commanding officer of the Barracks to the General Hospital.

With the reopening of the Army Medical School in October, 1901, the writer was made Professor of Military Surgery in that institution, thereby putting the hospital in direct connection with the school, so that it could work with it and be utilized for the clinical instruction of the students, particularly in military surgical methods, and for teaching them hospital administration and the general details of hospital management as they pertain to the military service.

The general hospital now assumed the position of a military station, under the command of the commanding officer of the hospital, and consisted of two units, the hospital proper and the

company. It will be noted, therefore, that the hospital was not now a hospital in the common acceptance of the term, but a military post, having the functions not only of a hospital but of an educational institution for enlisted men and for students at the Army Medical School.

The desirability of maintaining such an institution both for the treatment of the sick and for work in instructing Hospital Corps men and for teaching in connection with the Army Medical School was at once evident. Equally it was evident that such work could not be properly carried on in a group of extemporized buildings, many of which were poorly constructed for temporary use only. It was the necessity for the continuance of this establishment which gave rise to the appeal to Congress, through the Secretary of War, for funds for the purchase of a suitable site, and the erection of a proper hospital thereon, and which has eventuated in the Walter Reed U. S. Army General Hospital soon to be erected.

The work done in the present hospital, and which is to be continued and amplified upon the completion of the new one, shows the general character and purposes of the hospital. Serially stated, the hospital will be used for the following named purposes :

(*a*) For treatment of special cases.

(*b*) For training enlisted men of the Hospital Corps for nursing and other duties.

(*c*) For instruction in connection with the Army Medical School.

(*d*) In case of war, to be expanded and used as a base hospital.

Cases of illness and injury are constantly arising in the military service which require special skill and special appliances for their treatment in order to save the men to the service, to reduce the pension list, and to give men disabled in the service of their country the benefit of the most advanced medical and surgical knowledge. The post hospitals at military stations are equipped for the ordinary run of cases, but it is too expensive to equip all the hospitals in the army, irrespective of their size, with the special and often costly apparatus required for the treatment of difficult cases. Equally it is impossible to have all the surgeons skilled in all the specialties of medicine and surgery. The advance of medicine and surgery has produced a large number of complicated and costly appliances, and has necessitated the train-

ing of medical men for their use and in the observation and treatment of special diseases. The proper treatment of cases requiring special skill and special apparatus can only be given at hospitals especially equipped for the purpose. The conditions relative to the treatment of special cases are similar in the army to the conditions in civil life. In civil life difficult and obscure cases occurring in the country and in towns and small cities are sent to medical centers where there are large hospitals fully equipped and with specially trained medical men in attendance. It is evident that under the conditions which obtain in military surgery similar methods must be pursued. The post hospitals must be supplemented by larger institutions, fully equipped with special apparatus and appliances, and officered by men who pay special attention to surgery, clinical diagnosis, diseases of the eye, ear, nose, throat, etc. On account of the small size of the main building at Washington Barracks all these requirements could not be carried out, but it is hoped that in the Walter Reed Hospital all these necessities will be met. In spite of the disadvantages which obtain at the present hospital, quite a large number of patients have been treated, and this may be taken as an indication of the usefulness of a general hospital in the treatment of special cases which are sent to it. From the establishment of the hospital up to September 8th, 1906, 6,674 cases have been treated. Of these 4,922 were medical cases and 1,752 were surgical, nearly all of the latter being operative.

As to the character of the disabilities treated at the General Hospital (and a like kind will be treated at the Walter Reed Hospital), it may be said that most of them are of a sub-acute or chronic nature. The preponderance of this class of cases over the acute kind is due to the fact that the majority are not of local occurrence, but are sent from all parts of the United States, and some from the Philippines. They are usually cases of an obscure nature, or those which, after prolonged ordinary treatment, require more special or operative measures. At the same time a fair percentage of acute cases is received, these being mostly from the posts in the immediate vicinity of the hospital, or cases arising in the Company of Instruction, the detachment on duty in the hospital, and soldiers and officers on furlough or leave in the city or passing through. The number of acute cases, in connection with the chronic ones, is sufficient to make the

clinic at the hospital an entirely general one, and therefore useful for clinical instruction in connection with the Army Medical School. With the increased size and facilities of the Walter Reed Hospital the clinical advantages will be correspondingly increased. Also, owing to the peculiar function which a general hospital has of treating those cases which have been found to require special appliances or special skill, the proportion of obscure and difficult cases is great. From a medical standpoint this makes service at the hospital particularly interesting, as difficult problems in diagnosis, prognosis and treatment are constantly arising.

A further function which the hospital will have is the treatment of officers who would otherwise be on sick leave. With no facilities for treatment other than those available at military posts, it has been customary in the past to give officers requiring special treatment, sick leaves of absence. In such cases the officers are removed from supervision of superior officers and medical officers. In consequence the treatment adopted is not always to the benefit of the officer, and the service suffers through long delay in restoring the officer to duty or by producing conditions which may lead to permanent disability. The interests of the service and of sick officers are better subserved if, instead of sick leave, a fully-equipped hospital is available to which officers may be ordered and there treated by competent medical men who are fully alive to safeguarding the interests both of the officer and of the United States.

Another important function of a general hospital is the observation of officers presumably incapacitated for service. The conditions of the military service are such that officers frequently have but desultory medical attendance. Their medical history is, therefore, imperfect, and their real physical condition when claim of permanent disability is made is often a matter of conjecture. It is important, if disability is not permanent, that this fact be ascertained and the officer saved to the service. Equally, to safeguard the interests both of the Government and the officer, it is necessary when disability exists that an accurate opinion be arrived at, both as to the nature of the disability and its cause. Observation at a hospital equipped with modern diagnostic apparatus is frequently the only way in which these questions can be authoritatively settled. The General Hospital at Washington is

being constantly put to this use to the fullest satisfaction of all, and the value of the Walter Reed Hospital to the Government in this way will be constant in the future.

In connection with the preceding remarks relative to the treatment of officers and enlisted men, it may interest the members of the profession who are in civil life to know that the professional work of a medical officer of the Army has a definite economic value, a value which can be accurately measured in dollars and cents. This arises from the fact that soldiers incapacitated for service on account of diseases or injuries acquired in line of duty receive pensions, and officers retired for similar cause are entitled to retired pay throughout the remainder of their lives. Consequently if a medical officer removes any evident disability from an enlisted man of the army and returns him to duty, he saves the Government the amount of the man's pension which he would have received in case of discharge for disability, and, in the case of an officer, saves the Government an annual outlay to the amount of the officer's retired pay. The value of the work done at an army hospital in saving money to the Government can therefore be, in certain cases, estimated, and when the writer appeared before the Appropriations Committee of Congress asking for an appropriation for a new general hospital, he presented to that body an argument for the appropriation based in part upon the work done in the General Hospital at the Barracks and its value in saving money to the Government. This argument was presented in September, 1898, and it showed that up to that time forty-three officers had been operated upon for disability, who, had the trouble not been removed, would have been retired from the service. The monthly retired pay of these officers ranged from $93.65 to $281.25, and had these officers been retired their retired pay would have been, per year, $79,253.40. Also it was shown that 430 enlisted men had been saved to the service, whose pension rate would have been from $6.00 to $65.00 per month, making a saving per year for pensions of $53,812.08—a total yearly saving to the Government of $133,065.48—the equivalent of three per cent. interest on an investment of $4,435,516.00. This estimate of saving was from surgical cases alone, no estimate being made on the 4,201 medical cases which had been treated up to that time, for the reason that while it is possible to accurately determine the result of an operable surgical disability, the

same cannot be said in regard to a medical case; but that the saving from medical cases is large cannot be disputed. These figures will serve to show what can be expected from the work at the Walter Reed Hospital, and the economic value to the Government of providing a hospital equipped with all modern appliances at which difficult cases can be properly treated.

As before stated, the hospital has a further function, that of training enlisted men of the Hospital Corps in nursing and other duties. Recruits for the Hospital Corps come from all vocations in civil life and most of them are entirely unfamiliar with nursing, Hospital Corps drill and military duties. In fact it may be said that a large number of the recruits have never seen the interior of a hospital, and the great majority of them have not the faintest idea of how to care for the sick. These recruits have been laborers, school teachers, pharmacists, stenographers, physicians, in fact represent almost every vocation. It is from this material that nurses have to be made and non-commissioned officers educated, so that the Hospital Corps can do its multitudinous duties of caring for the sick both in peace and in war. The Company of Instruction now attached to the General Hospital at Washington consists of about 150 men. In this company a systematic course of instruction in nursing, first aid and Hospital-Corps drill is given by means of recitations, lectures, drills and practical work in the wards of the general hospital. As soon as instruction is completed the men are sent for duty to various military hospitals in the United States and the insular possessions. Since the establishment of the General Hospital at Washington, in 1898, over 2,300 men have passed through the company. With the establishment of the Walter Reed Army General Hospital much greater facilities will be afforded for the theoretical and practical training of the company.

A further use to which the general hospital will be put, and has been put, is for instruction in connection with the Army Medical School. The Army Medical School was established in 1893, and yearly sessions have been held at the school with the exception of an interval during the war with Spain. This school is one of the military-service schools authorized by the Secretary of War and placed under the general supervision of the War College by General Orders 155, November 27, 1901. In this school, medical graduates who are candidates for appointment to the

Medical Department from civil life and selected officers from the National Guard of the different states are trained in the duties of medical officers; the school is carried on in the Army Medical Museum, on the corner of Seventh and B Streets, Southwest. It is essential to the success of training in this school that the students be instructed in hospital administration as applied to military hospitals, military surgery, Hospital Corps drill, establishment of field hospitals, and like subjects which pertain particularly to military medical methods. As the curriculum of the school is now arranged, student officers attend clinics at the general hospital, where they are instructed in military surgery and in the use of instruments and appliances furnished for the use of medical officers. The use of the hospital for clinical instruction in connection with the Army Medical School (as stated by the Surgeon-General in his report for 1903, page 126), "has a value as an essential part of the instruction of young medical officers and enlisted men of the Hospital Corps which cannot be estimated." In this connection the Surgeon-General (in his report for 1903, page 18) states, "The distinctive features of the course at the school are, first, the large measure of personal attention paid to the student's individual work by instructors in the laboratories and surgical demonstrators, which it is believed is not exceeded, if equalled, in any post graduate school." The combination of the general hospital and school, as is the case with the English army hospital and school established at Netley, after the Crimean war, and the celebrated French hospital and school at Val-de-Grace at Paris, offers advantages which are great and evident.

In laying out the general plan of the grounds on which the Walter Reed Army General Hospital is to be built, provision has been made for a site for an academic building for the Army Medical School, and it is hoped that in time a building entirely adequate to the purpose may be erected, thus giving a military medical institution with all necessary working units.

The Walter Reed Army General Hospital will also subserve the purposes of a base hospital capable of almost indefinite expansion in time of war. In all previous wars in which the United States has engaged, troops in considerable number have been assembled in Washington and its vicinity. The number of the sick from the troops assembled in and near Washington and sick

from other commands who while being shipped to different parts of the United States in passing through Washington are retained in this city, has in the past always necessitated the establishment of one or more large general hospitals here. The establishment *de novo* of large general hospitals is always accompanied with considerable delay, expense, some confusion and unavoidable discomfort to the sick. With the nucleus of a general hospital already established and in running order the expansion of the hospital to any desired size can be done practically, without delay, and at a minimum expense—the nucleus being provided with all necessary apparatus, both medical and surgical, with operating rooms, and with the administration in working order nothing is required but the addition of temporary wards to care for the sick in the very best manner. The establishment of a general hospital in the District of Columbia, not only for the use of the army in time of peace, but for its expansion in time of war, is one which immediately appeals to the military expert, as thereby a contingency is prepared for in advance, fully in accord with the time honored maxim, "in time of peace prepare for war." When, therefore, such an establishment meets so many requirements, namely, special advantages for the care of the sick in time of peace, the training of Hospital Corps men for their duties in nursing, the training of medical officers fresh from civil life in administrative and other duties which pertain particularly to the military service, and expansion in time of war, the great use of such an institution in the military service is evident.

The location of a new general hospital to be built in the District to replace the old one at Washington Barracks required careful selection. A board was appointed by the Secretary of War of which the writer was a member, and notice was sent to all the prominent real estate men in the city to submit plots of ground. Some forty different offers were made, and the board in its work canvassed the entire District. In locating the site the board was governed by the considerations that although the hospital was not a city hospital it should be located within convenient reach of the main railroad depot, on a good road, and should have street-car facilities, adjacent water main and sewer; also the site should be well elevated, well drained, and have sufficient size to give good air space about the hospital and to allow the erection of other buildings which would eventually be re-

quired. Equally, the site should be sufficiently large to allow the erection of numerous temporary pavilion wards for use in time of war. With these various considerations in view the board finally recommended the purchase of 43½ acres of ground, fronting on Brightwood Avenue, and extending through west nearly to Fourteenth Street.

The site is therefore in the most northerly portion of the District, and is almost exactly five miles distant from the Treasury, the Capitol and the new Union Depot. Street-car facilities are now furnished by the Brightwood Avenue line, and when the Fourteenth Street line is extended, as it will be, to the District boundary, the site will be most convenient to this car line as well. In time of peace the Brightwood Avenue road, which is finely macadamized, affords an excellent way in which to bring patients from the railroad terminal. In time of war, if necessary, direct railroad communication can be made with the Metropolitan branch of the B. & O., as this passes within about a quarter of a mile to the east, and a branch road could be run into the grounds without difficulty; or Silver Spring station, which is less than half a mile away, can be utilized. From Fourteenth to Sixteenth Street in this part of the District is but one block, and on the west of Sixteenth Street is Rock Creek Park with its high ridges, where temporary camps can be placed if such are required.

The terrain of the site is itself most excellent, for while the site is not level, it consists practically of five main elevations upon which the different groups of buildings can be advantageously placed, and the slopes from these are such that perfect surface drainage is assured. Probably in no other part of the District could so many advantageous conditions be found, and when Fourteenth and Sixteenth Streets are extended these fine approaches will be available on the west, putting the hospital in most perfect communication, so far as fine roads are concerned, with the central portions of the city.

The hospital itself is designed to be built on the pavilion system, with a central administration building and wings placed laterally, all facing the south. With the present appropriation of $200,000 only the central building will be erected, this being planned to include for the present the administrative offices, the wards, kitchens, operating room, etc., for a total of seventy-five patients.

The hospital is designed on the colonial type of architecture, and all the adjacent buildings erected in the future will conform to it. It is to be built of red brick with white stone facings, and will have all modern improvements. The ventilation of the hospital will be by the plenum-vacuum system, the air being filtered on entry and carried over coils of hot-water pipe before being distributed to the different rooms. The air ducts have been so constructed as to change the air in the offices and halls three times and in the wards four times, per hour. The heating will be by hot water, mechanically circulated, and the radiators will be only of such size as to supplement the warmed incoming air and to make up for radiation. Lighting will be mainly by electricity, only a sufficient number of gas lights being installed to furnish light should the electric current fail. The plumbing will be most modern in character. No plumbing will be installed in the operating room, this room being kept entirely free, the necessary wash stands, sinks, etc., being placed in adjacent rooms. The floors of the wards and offices will be of wood,—as it is believed that experience has demonstrated that a wooden floor can be kept sufficiently clean and gives the pleasantest surface upon which to walk,—except in those situations where much wear will be had, such as the main hall of the lower floor, which will be laid in Terazzi and marble.

Finally, some statement may be made relative to the expansion of the hospital and its combination with other units as a part of a medical military educational institution. The Medical Department stands greatly in need of a fully-equipped army medical school, and the site of the Walter Reed, Army General Hospital offers excellent facilities for uniting such a school with the hospital and with companies of instruction of the Hospital Corps, so making a complete educational unit. Equally, in time the library and medical museum of the Surgeon-General's office, now at the corner of Seventh and B Streets, Southwest, will have to be provided for elsewhere. The city improvement plan, which will undoubtedly be quite closely adhered to in the future, disposes of this brick building. For this reason, Congress has not favored further appropriations of money for extensive repairs or extension. The Army Medical School is now carried on in the building, but the quarters are cramped and not suitable; nevertheless, Congress will not enlarge the building to accommodate the school, as the building is not in ac-

cord with the city improvement scheme. With the elaboration of the improvement scheme it will be necessary to do away with this building, and then a new and suitable one should be erected. The library is such an important institution that it should be continued in its individual existence rather than be absorbed into the Library of Congress. It is hoped that with a suitable place for locating the library, and with the members of the medical profession advocating it, a proper building may be erected on the site of the Walter Reed Hospital when the necessity for such a building occurs. The total expansion upon the site, therefore, covers a medical military institution having for units the academic building of the Army Medical School, and its adjuncts; the Walter Reed U. S. Army General Hospital; barracks for two companies of the Hospital Corps—one a company of instruction and the other a reserve ambulance company; and, finally, the library and museum of the Surgeon-General's office. This scheme, properly carried out on an adequate scale, will give an educational institution for the use of the army in accord with its needs and somewhat on the lines of the large army medical schools and hospitals in Europe. It is now an accepted fact that the practitioner of medicine and surgery graduated in the civil schools must have a supplementary education in the special work of the Medical Department in order to fit him for the duties of a medical officer. The special requirements of the practice of medicine and surgery as adapted to the army in peace and in war must be taught, and thorough instruction must be given in theoretical and practical hygiene as it relates to the military forces. Also, with the extension of our possessions to the tropics, the subject of tropical medicine, which is not extensively taught in the civil schools, must be given due attention in the Army Medical School. With an academic building of suitable size and properly equipped with laboratories, lecture rooms, etc., supplemented by a general hospital having facilities for clinical and administrative teaching, combined with companies of the Hospital Corps being instructed in their duties and used for instruction of student officers, and with the library and museum of the Surgeon-General's office upon the same site, a complete medical military educational institution of great value would be had. It is hoped that in time such an institution may be obtained in its entirety, and that it can be built upon a scale worthy of the object for which it is intended and of the Capitol city in which it is placed.

Dr. Wm. A. White, Superintendent of the Government Hospital for the Insane, said that he had been much interested in Dr. Borden's paper, but was hardly competent to speak upon the subject, as the problems to be dealt with in the construction of an army hospital are different from those to be solved in building asylums for the insane. He could, however, appreciate the vast amount of labor involved in working out the plans described by the essayist, as he had helped in forming the plans for the new Freedmen's Hospital now in course of construction in this city. He had had no conception of the vast extent of the War Department's plans for the Walter Reed Hospital. If carried out as projected, the institution will be a monument to the profession of medicine in America.

Dr. Kober desired to congratulate Dr. Borden upon the plans presented and to point out that the perfect appointments of the proposed hospital should be ascribed largely to Dr. Borden's individual suggestions rather than to the architects. To work out the details of such a complete institution must have been an immense labor. In hospital construction architects must look to the medical man for advice, and usually they are very willing to act upon his suggestions, adding their own special skill to work out the structural details. The general scheme for the Walter Reed General Hospital was Dr. Borden's ; and it is peculiarly fitting that he should have been instrumental in planning this great memorial to the great Dr. Reed, whose intimate friend he was.

The location of the Walter Reed Hospital on Brightwood Avenue will place it in proximity to two other large hospitals—the Freedmen's Hospital, now in course of construction, and the proposed Municipal Hospital. Only one building of the latter institution has as yet been provided for ; plans are now being made for a Municipal Tuberculosis Hospital. The tentative plans provide that one side of the building shall be devoted to white, the other to colored, tuberculous patients ; the entire roof to be a roof garden, for the open-air treatment of incipient cases. In this way a great saving in expense and space will be made.

He had made the same observation as Dr. Borden in examining the construction of various hospitals, namely, the want or inadequacy of lifts for conveying food carriages from floor to floor.

He desired to use the opportunity to call attention to the Society's committee on the Reed Memorial. The committee had been painfully surprised at the indifference to the project ; at present only eight or nine Washington physicians have contributed. It had been proposed to raise a memorial fund of $25,000, and after a lapse of several years less than $20,000 has been secured from the entire United States. Surely Washington has contributed very scantily in view of the fact that most of Dr. Reed's work was done here and much of his life was spent here.

San Francisco, across the continent, has done better ; the Medical Society of that city contributed $500. Dr. Kober wished to emphasize the fact that the opportunity is still open for Washington physicians to share in the memorial.

Dr. Cook said that, as a member of the committee referred to by Dr. Kober, he would state that, owing to many discouragements met with heretofore, his committee had been able thus far to accomplish very little. It is the intention of the committee soon to call on each member of the Society for contributions to the Reed Memorial fund.

Gen. Forwood said that he had not anticipated taking part in the discussion, but he wished to observe that it is most unfortunate that the Army Medical Corps can not be allowed to work out the complete plans beforehand and secure Congressional approval of the entire design, with authority to proceed with construction as necessity arises. As Dr. Borden had stated, only an admittedly inadequate amount has been appropriated as yet. That amount must be expended, and the War Department must trust to luck to patch out the institution in the future. In this manner the most expensive buildings will be secured and perhaps the most ill adapted

Dr. D. S. Lamb said that the problems of hospital construction are very far removed from those of former years, when any building of sufficient size was considered suitable for a hospital ; when ventilation was on the hit-or-miss plan, and lighting was confined to oil lamps or tallow candles. In the plans presented by Dr. Borden, Dr. Lamb had been impressed by the elaborate details for electric lighting, telephone communications, x-ray rooms and automobile buildings. These things were not dreamed of a very few years ago, and he thought that he was not fanciful in predicting that many details of this sort will require a different treatment as a result of new discoveries before the plans presented can be carried out.

THE HOSPITAL, A PROPER PLACE FOR THE DELIVERY AND MANAGEMENT OF THE PUERPERA.*

By N. P. BARNES, M. D.,

Washington, D. C.

The unrest among the general practitioners of medicine, occasioned by the annoyance of their obstetrical work, has divided the profession into three distinct classes.

The first, realizing that they can not do justice to all the departments of general medicine and surgery and maintain a fair degree of scientific exactness and personal comfort, abandons obstetrical practice entirely. This class of general workers is few in number.

The second class adheres to the principle propagated by the oft repeated statement, "child-bearing is a physiological process" and requires no especial attention, except in a few prolonged labors, when the expert is called to adjust the difficulty or share the responsibility of an unfortunate termination.

This list includes many who are enrolled in the honorable calling; many who enjoy large and more or less lucrative practices, regardless of the cheap and unscientific work they do; many who, by preference, employ the self-made midwife who examines, reports and summons the doctor in time to cut the cord.

These men discover anomalies, unfavorable presentations and positions, unfunctionating kidneys, flat nipples, contracted or deformed pelves after labor has been progressing or rather unprogressing for hours or days. The discovery of injury to the soft parts of the mother is a rare accident for these men who pride themselves, and receive no small commendation, for their ability to deliver a woman without exposing her. A man of this class can even truthfully say: "Out of hundreds or thousands of cases (depending upon the elasticity of the memory) delivered by me personally, not a single perineal tear was discovered." These men deserve the credit of making gynecology a most necessary and profitable business.

The third class comprises those who are anxious to take ad-

* Read before the Medical Society October 10, 1906.

vantage of every means to benefit their patients and better their work. They will insist upon the early measurement of the pelvis in all primiparae ; of ascertaining the position and presentation by the seventh month, at which time an occipito-posterior can be more easily turned to an occipito-anterior and a breech or transverse changed to a vertex, and if two or three attempts result in failures they feel confident that the placental attachment or cord entanglement prevents proper adjustment of the foetus. They will insist upon the proper hygiene of the mother, see that the various organs are functionating properly and the mammae cared for and prepared for future functioning. They will discover whether a present leucorrhea is simple or specific. They will examine the placenta, repair lacerations and leave instructions not only for the mother's but for the baby's bath, diet, etc.

Too often they are handicapped in their work by a lack of facilities and assistants. Too often their orders are overruled by the granny or the knowing mother or neighbor. For this annoyance, for the purpose of doing satisfactory work and for lightening the worry and responsibility, I offer for your consideration the title of this paper, "The Hospital, a Proper Place for the Delivery and Management of the Puerpera."

For some years I have required the primipara who engaged my services to take one of two courses : be delivered in a hospital or employ a trained nurse.

There is a sentiment among some persons to have their children born at home. Others have a profound aversion for a hospital, but once delivered in a hospital they usually prefer it thereafter. Many persons object to going to a hospital for any illness, and their opinion in this can sometimes be traced to the physician who fears to lose his case or his prestige in transferring his patient to a hospital. Too long has the hospital, like the necessary operation, been the last resort.

Some say money can get any thing needed in these cases, and the patient can be provided for just as well at home. This to the experienced mind is a useless and erroneous argument. The best operating or delivery room at home can not be made to compete with the equipment and cleanliness of the best operating or delivery room of the modern hospital ; and in emergencies the needed assistants are at hand at a minute's notice. Time, money

and often patients are saved by prompt action. Again the sympathetic mother and soft husband can be more readily excluded, or banished during the time of action, and the nervous woman can be more easily managed.

The doctor, not annoyed by a hundred questions and suggestions emanating from troubled relatives and friends, with better equipment and assistance, is able to use his best efforts for mother and child. The lacerated cervix and perineum can be repaired in a careful, painstaking manner because of the extra assistance, the better light, the high delivery table and every other convenience.

How unsatisfactory is the repair of a perineum when the woman, partly anesthetized by the nurse or husband, disappears over the far side of the bed while the physician, needle-holder in hand and needle in perineum, follows on. Under these circumstances it cannot but be expected that a large number of men, worn out by prolonged effort, thirsting for a breath of fresh air and, most of all, having acquired the habit of skipping over some things that can be kept under cover, leave a ruptured part to the uncertain healing of nature, or the following surgeon, with the convenient excuse of "It would only be torn down at the next birth anyway."

Every emergency arising in the progress of or following the delivery can be met more promptly and more accurately at a properly equipped hospital. In instrumentation, there are few physicians who can carry pans sufficiently large to boil the forceps. The towels and sheetings are only laundry-clean. The lack of assistance compels the physician to arrange and rearrange the patient so that by the time he begins operation his hands or gloves are no longer aseptic. Some men will say "Instrumentation is needed only occasionally, post-partum hemorrhage is not very frequent; ruptured uterus, placenta previa and puerperal eclampsia are rare; lacerations are of little consequence, and 97 per cent. of all cases have normal position and presentation."

This statement is in accord with the teaching of a hundred years ago, but statistics need revising; civilized woman of today requires something more than her Indian sister.

One of the more recent and one of the best works on obstetrics makes the following statement, summarizing from old statistics: "It is best for the beginner to ignore the possibility of O. L. P. and O. D. A. on account of their infrequency and of the exces-

sive complications that an effort at their recognition would involve;" and again, "owing to the infrequency of the O. D. A. and O. L. P. positions it is generally safe to class all cases in which the back of the child is found toward the left O. L. A., and those in which it is found toward the right of the mother O. D. P."[1]

For the beginner or for the established practitioner this is bad advice: first, because it invites lax and incomplete methods, and, second, because it is incorrect, as shown by recent careful examinations. In Pinard's report of 500 cases 11 per cent. were O. L. P. and 38.8 per cent. O. R. P. In Williams' 1,687 cases, while there were only 2.6 per cent. O. L. P. there was 22.3 per cent. O. R. A. and 14.2 per cent. O. R. P.[2]

In 100 consecutive multiparae in my own work there were 15 O. R. A., 4 O. R. P. and 4 O. L. P. In 100 consecutive primiparae there were 28 O. R. A., 8 O. L. P. and 8 O. R. P. This adds confirmation, though perhaps in a small way, to the statement made by Frye, that O. P. positions are more common in primiparae; as out of the 100 primiparae there were 16 P. positions, while in the 100 multiparae there were but 8.

In Hill's[3] report of 1,000 cases, forceps were used 42 times, and podalic version 20 times. There were 30 breech, 6 shoulder, 5 face and 1 brow. There was fever from various causes in 72 of the mothers, with two deaths. Forty-nine fetuses were either stillborn or died in the puerperium.

From the various statistics we glean the following: The frequency of face presentation is 1 in 250, of brow presentation 1 in 200, of breech 1 in 60 (at term), transverse 1 in 200, compound 1 in 250, multiple birth 1 in 90, prolapsed cord 1 in 65, placenta previa 1 in 239[4], inversion of uterus 1 in 2,000[5], and eclampsia 1 in 133, as given by Williams, but 1 in 72, as given by Morgan[6] from the records of the Columbia Hospital of this city.

Shock, which is more common than any of the foregoing, is not mentioned. However, Hirse[7] calls attention to the average mortality of the fetus in vertex, occipito-anterior positions. This he places at 5 per cent. One in twenty for the recognized normal and easy births is a rather high mortality for a process that is considered physiological in all its details.

Further, in this perfectly normal process the frenum is almost always torn, and more extensive lacerations occur in at least one-third of the cases[8]. In multiparae these tears are naturally less

frequent, as the majority have only partly repaired from the previous births.

No difference how slight the tear, it should be closed at once, if only to lessen the raw surface exposed to infection. The only exception to this, in my mind, is where the soft parts are so bruised and riddled as to favor the probability of extensive sloughing.

Just here I want to enter a protest against the forcible use of instruments, especially in contracted or flat pelvis. Here they are often contraindicated, as Caesarean section early performed under recent technic offers better results.

Injuries to the upper vagina, especially associated with deep cervical tears, demand immediate attention to overcome the hemorrhage that is sometimes alarming. More than a hundred cases[9] have been recorded where the cervix has been partly or entirely torn loose from its vaginal attachment. In some instances the child escapes into the peritoneal cavity while the intestines protrude into the vaginal canal[10]. This occurring in a home would be reported death from post partum hemorrhage. It can be depended upon there is always a cause for post partum hemorrhage, and we had better have our case some place where we can do something and do it quickly.

If a man depends upon old books and old teachings he would argue the greater frequency of sepsis in hospital practice. This was true before the advent of Listerism. The death rate in lying-in hospitals was from 2 to 10 per cent., and epidemics sometimes far exceeded this mortality. "In the women who survived, feverless childbeds were comparatively infrequent." Under recent methods mortality from sepsis in institutions is less than one-fourth of 1 per cent. Thus "While in pre-antiseptic times the puerperal mortality was many times greater in public institutions than in private practice, today the pauper delivered in a hospital is exposed to less risk than are the well-to-do classes who are confined in their own homes."[11]

The argument thus far has endeavored to prove the advantages of the hospital over the home, with the woman alone considered. The children deserve some consideration when more than 5 per cent. succumb to the physiological process of being born, in the cases where position, presentation and other requirements are normal.

Asphyxia is quite common. You who have attended many

confinements have seen infants remain breathless because the mother needed your attention and there was no competent assistant to revive the child.

Ophthalmia neonatorum need only be mentioned to remind you that it goes hand in hand with the dirty nurse and the careless doctor.

Most of the older men have seen the infant's eyes infected and reinfected until the "colored nurse," "spare the mark!" was discharged. Show me the kind of old mammy who goes with the sentiment of bearing children at home, and I show you a woman who will blow her tuberculous breath in the new born's lungs, dope the infant with teas and put breast milk in its eyes. Furthermore, she will give a vaginal douche with an unsterilized rectal syringe, draw a distended breast with her own mouth, provided there is no pet pug at hand, and insist on keeping the little belly full as the only cure for the three-months colic.

According to Kehoer, Hubner, Winkel and Dluski, about 50 per cent. of all mothers have fissured nipples and 25 per cent. of all fertile married women have suffered from inflammation of the breast at some period of their reproductive activity. This most troublesome and painful mastitis, this meddlesome and ignorant maltreatment, this excessive infant mortality, can be avoided in great measure by sending our cases to a properly equipped hospital.

[1] American Text-book of Obstetrics, pp. 407, 410.
[2] Williams' Text-book of Obstetrics, p. 227.
[3] American Journal of Obstetrics, July, 1906.
[4] Townsend, Boston Lying-in Hospital.
[5] Kehrer, Handbuch der Geburtshülfe.
[6] Morgan, American Journal of Obstetrics, May, 1906.
[7] Hirst's Text-book, 1903, p. 391.
[8] Williams' Text-book, p. 286.
[9] Kaufmann, Monatsschr. f. Geb. u. Gyn. 1901, XIII, 464, 470.
[10] Ross, American Journal of Obstetrics, 1898, XXXVIII, 449, 469.
[11] American Text-book, p. 341.

Dr. Acker said that he believes in sending labor cases to hospital for treatment and follows that rule when possible. There is less danger to the patient, and the physician may leave her in the care of the hospital attendants with less anxiety.

Dr. D. Olin Leech said that he agreed thoroughly with the essayist. Dr. Leech always endeavors to send his obstetric patients to hospital, and thinks that he gets better results from hospital

treatment. All practitioners will recognize that it is practically impossible to keep the hands aseptic when attending puerpera at home, even with the assistance of the most capable trained nurse.

Dr. Reyburn said that he could speak with the heartiest commendation of the able and scholarly paper. Although he now does very little obstetric work, he prefers that such patients should go to hospital. He had recently had an illustrative case: a pregnant woman developed albuminuria, with failure of elimination; he anticipated eclampsia and had the patient sent immediately to a hospital. He felt assured that the prophylactic treatment and watchful care at the hospital alone prevented the development of eclampsia and insured the patient's safe delivery.

The difficulty is that many patients are unable to meet the expense of hospital treatment, and under such circumstances they are exposed often to danger from ignorant nurses. Midwives need to be better educated; the only case of puerperal sepsis he had seen in recent years was due to a nurse's carelessness. Dangerous carelessness may be observed at times even in the work of the trained nurse, when free from hospital control.

Dr. Isabel Haslup Lamb inquired of Dr. Barnes what was his impression as to the safety of the *child* in hospital work? What is the character of the care given to the babies in the hospitals?

Dr. Kelly said that he believed that all had enjoyed the essay and agreed with the essayist. But he wanted to say a word in defense of the home treatment of the puerpera. He believes that if a woman becomes septic, the infection is introduced by the doctor or the nurse. If reasonable care is taken in the preparation of the patient and of the lying-in room, then the responsibility devolves upon the physician and the nurse. If he were a pregnant woman, he would rather go to the woods and have the baby by himself than have a midwife or a bad doctor. Leave a parturient woman alone and ordinarily she will have her baby all right.

Dr. A. F. A. King said that he had enjoyed Dr. Barnes' paper and, of course, heartily agreed with him.

The early part of the paper which pictured the advantages accruing to the physician's comfort from hospital treatment reminded him of an old definition of midwifery which he had heard in his student days in Edinburgh: "A melancholy attendance on misery, a mean submission to peevishness, and a perpetual interruption of pleasure."

Dr. Kelly, in the discussion, had spoken very well of the importance of letting the parturient woman alone, of not meddling with a physiological process. Old figures have been set forth to show that more women were killed by sepsis than were saved by vaginal examinations and by instrumental interference. The latest and best teaching is to make no vaginal examinations at all during labor; they do no good and are dangerous.

As he had said before, labor is a physiologic process and ought not to need assistance. But labor requires muscular power and nerve force, and the highly civilized woman of today has not these forces. She may be able to get the head down into the pelvis, but there the resisting perineum is the "last straw that breaks the camel's back" of the woman's powers, and, much as we regret it, we must interfere. Interference being so frequently necessary, then, the sentiment seems to obtain very widely that the parturient woman should go to the hospital.

Dr. Barnes said that he felt very grateful to the speakers for their kind remarks. He replied to Dr. Lamb that the hospital distinctly improves the infant's chances, particularly in difficult cases; all the attendants being busy with the mother when confined at home, no one is at leisure to resuscitate a breathless child. Two cases well illustrate his point: A woman with a low implantation of the placenta was warned of dangers and urged to go to the hospital, but refused. Labor was over-due and was very difficult to induce. Bleeding was very profuse and the child had to be turned to control it; finally forceps had to be used to extricate the after-coming head. While he, the anesthetist and the nurse were engaged with the bleeding mother, the infant was lost.

On the other hand, a primipara with contracted pelvis was advised that Caesarean section or symphyseotomy would be necessary for her delivery. She absolutely refused either operation, so that he had to send her to the hospital and induce labor at seven months. With hospital care the seven-months infant was saved and is now a thriving child.

He keeps his patients in the hospital three weeks to give both mother and child a good start. When they go home they nearly always get into trouble on account of officious meddling. The objection that patients may be neglected in hospitals must be met by the physician seeing to it personally that every detail of treatment is carried out and the patient's wants supplied.

As regards Dr. Kelly's advice to leave parturient women alone, Dr. Barnes believes that they cannot be left to unaided nature. Tears will almost always be encountered and they must be repaired.

REVIEW OF OPHTHALMOLOGY.*

By H. A. POLKINHORN, M. D.,

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In reviewing the recent literature of any one branch of medical science the progress made in modern medicine is brought very forcibly to our attention. Indeed, as the *London Lancet* so ably puts it: "The prominent novelty of one year becomes the assumed, the almost unmentioned, routine of the next year; what once seemed important becomes trivial, and, conversely, the small point, casually noted, is found by the next year to be worthy of exceptional mention as a development of proved value." A brief résumé of Ophthalmology proves this branch of medical science to be no exception to the above rule, and while we, perhaps, find no real discovery, we see during the year marked progress and many steady advances.

ANATOMY.—Jacoby[1], in an interesting treatise on the neuroglia of the optic nerve, arrives at the following conclusions: (1) The neuroglial fibers are thickest at the level of the lamina cribrosa. (2) The neuroglial elements mingle with the connective tissue remains of the hyaloid artery on the floor of the physiological excavation. (3) In the disk proper the elements are extremely extenuated. (4) The fibers, concentrically arranged, form the intermediate tissue (Kuhnt) between the choroidal ring and the retina. (5) In the retina the elements run, for the most part, perpendicularly to the course of the nerve fiber.

PHYSIOLOGY.—Bielshowsky[2], in a paper on the origin of unilateral vertical movements of the eyes, demonstrates from experimental and theoretical observations the existence for each eye of secondary motor centers, independent of each other and of the will. These centers are in addition to the cortical centers for associate ocular movement, and can produce unilateral vertical movement only when the cortical centers are in the dormant state or in the absence of fusion.

All text books on ophthalmology refer to three reflections occurring when a luminous object is held in front of the cornea: one from the anterior surface of the cornea, and the second and

*Read before the Medical Society, October 17, 1906.

third from the anterior and posterior capsules of the lens. The first two of these are upright reflections, the last one an inverted reflection. Hess[3], in an interesting paper, has shown that, in addition to these, there is a third upright and a second inverted reflection formed respectively by the anterior and posterior surfaces of the lens nucleus.

BACTERIOLOGY.—Dolohnoff and Sokoloff[4], in an exhaustive study on the conditions under which micro-organisms pass through abnormal tissue into the interior of the eye, arrive at the following conclusions: (1) A purulent infection which begins in a corneal cicatrix quickly spreads to the deeper parts of the eye. (2) The clinical course of this disease is typical, and its characteristic symptoms seem to be remarkably disproportioned to the insignificant injury with which it is started and its rapidity and violence. (3) No explanation of its characteristic course can be obtained clinically, the existing theories fail to explain all symptoms and seem to be open to criticism. (4) The ulceration produced by the inoculation of staphylococci and streptococci in the superficial layers of the cornea extends chiefly to the depth of the scar in the leucomatous tissue, while in the normal tissue, after an equal lapse of time, it is confined to the superficial layers without involvement of the deeper. (5) A passage of the microbes into the anterior chamber could not be demonstrated when Descemet's membrane was uninjured even though leucomatous tissue was extensive. (6) The density of the cicatrix and the absence of a fistula afforded no hindrance to the passage of micro-organisms.

An interesting study on the septic infection of wounds by the saliva of the surgeon in operating on the eye has been contributed by Dr. G. Hotta, a Japanese physician. The experiments were made on mice, rabbits and cats, and the saliva was taken from persons of different ages and positions in life. The eye having been made as aseptic as possible, the saliva was applied between the layers of the cornea with the point of a knife. In other cases the saliva was applied into the interior of the eye through an opening made with a Graefe's knife. The result of the cases in which the saliva was carried into the interior of the eye was constantly negative, while in the cases in which the infection was introduced between the layers of the cornea, constantly positive. In 36 per cent. of the last named set of cases pneumococci developed, in 56 per cent. streptococci, and in 30 per cent. staphy-

lococci. From these experiments it is seen that while the clean cuts made in cataract and iridectomy operations offer little opportunity for micro-organisms to propagate, a false passage made between the layers of the cornea is most susceptible to infection, and those around the operating table should refrain from speaking or coughing during the operation.

PATHOLOGY.—The very high magnifying power of the ultramicroscope has been used by Dr. E. Raehlmann[5] to throw further light on the pathology of trachoma. This investigator regards trachoma as only a more virulent type of follicular conjunctivitis, and describes the new formation of the gland-like bodies in detail. These, at first hard and resistant, soften and burst either by the action of leucocytes, a process which the surgeon accomplishes by crushing the granules, or by mucoid degeneration. With the high powers extremely minute polymorphous bacilli, cells, fragments of nuclei and small mobile gray granules are to be seen. The bacillus, however, of trachoma is not yet positively known, and it will require further investigations to discover the exact relation of these bodies to the disease.

The etiological factors in the production, maintenance and alteration of intraocular pressure still remain an unsolved problem in ophthalmology. This subject has received much attention from Engelmann[6], and the result of his investigations on the human being and on animals has thrown much light along this line. He has found that after ligating the common carotids in rabbits the tension fell on both sides, but the decrease was more noticeable and persistent on the side ligated. Ligating the external jugular vein produced a temporary increase in tension on the corresponding side. Stimulation of the sympathetic caused a fall, resection of the sympathetic or extirpation of the superior sympathetic ganglion caused a gradual fall with subsequent rise to normal or above. In four human beings, removal of the superior cervical ganglion (two glaucoma, two Graves' disease) produced merely transitory decrease in the intraocular tension. Tenotomy of all the recti muscles caused lowering of tension in rabbits. Intraocular pressure does not vary with the rotation of the eyes, provided that parallelism of the visual axis is maintained. The tension is increased during decided convergence, but not affected in accommodation disassociated from convergence.

CONJUNCTIVA.—Alt[8], in an interesting study on the relation-

ship of pinguecula to pterygium, states that the connection between the two is no longer as mysterious as formerly. After studying specimens of beginning pterygia he is convinced that a pinguecula is, as a rule, the origin of a pterygium. "Given the necessary conditions," says the writer, "the presence of a pinguecula leads to a slow inflammatory process in the conjunctival tissue which separates it from the corneo-scleral margin, with new formation of tissue. This tissue, preceded by some small blood vessels, grows into the cornea between the epithelium and parenchyma in the place of Bowman's membrane, which is destroyed in advance of the oncoming head of the pterygium by an army of leucocytes. The newly-formed tissue drags the pinguecula and the conjunctiva along in its growth towards the center of the cornea, and the characteristic tissue of the pinguecula is gradually lost."

Vernal conjunctivitis has received the attention of numerous investigators during the past year, but still its etiology remains a mystery in ophthalmology. Along this line an observation by Dimmer[9] is worthy of note. He reports a case in which the patient was cured of this disease by simply being kept in the dark, and thinks, therefore, that light may be an etiological agent.

Conjunctival irritation excited by proximity to a horse is the interesting substance of a paper by Posey[10]. He reports three cases and refers to others described by rhinologists. The symptoms are somewhat similar to hay fever, and are caused by a peculiar susceptibility to certain bacterial or chemical substances which emanate from the horse.

Cornea.—In the treatment of conical cornea, Grossman[11] recommends the application of hot air as the cauterizing agent. He finds the galvano- and the thermo-cautery not entirely satisfactory, as they completely destroy the tissue, and it is impossible to regulate accurately the amount of heat. At times one wishes only to singe the surface of the cornea or to produce a mere drying of the epithelium, and to accomplish this, Grossmann has used hot air with an instrument devised by Hollander, of Berlin. The instrument consists of a Pacquelin, inside of which a platinum coil is placed. An ordinary rubber bulb forces the air through the heated coil, thus producing a hot current, the temperature of which is regulated by the distance the nozzle is held from the cornea. The hot air is played on the apex of the cornea till the de-

sired effect has been obtained (learned only by experimenting on bullocks' eyes). This procedure also desiccates the surrounding parts of the cornea which, however, soon returns to its former transparency.

Relation of the Nose to Diseases of the Eye.—The nasal fossae and sinuses are now recognized as being important etiological factors in a great number of ocular diseases, and during the last year this subject, which has received but scant notice in the past, has engaged the attention of a great many writers, namely: Moritz, Bronner, Paunz[12], Posey[13], R. H. Johnson[14], Fish[15], Paterson[16], and others. Few ophthalmic surgeons, however, agree with Ziem that 30 per cent. of all ocular diseases are primarily due to nasal affections.

Refraction.—The partial or complete correction of myopia in the early years of life still seems to be an unsettled question. Along this line numerous views and observations have been recorded during the past year. The majority of writers, however, appear to favor the full correction, on the ground that myopia is essentially due to elongation of the eye-ball, under pressure of the extrinsic muscles, the result from this being an increase in the angle of convergence. Dr. Hansell believes that glasses giving full correction should be worn for distant objects but never for near use. Dr. Bourgois, in a paper read before the French Society of Ophthalmologists, on the treatment of myopia, stated that he strongly advocated total correction. From inquiries that he made among the members he drew the following conclusions: (1) Full correction of the myopia; (2) Glasses to be worn constantly for near and distant objects; (3) This correction arrests or retards the progress of myopia.

Operations.—For many years ophthalmic surgeons have experimented with various methods for an improved stump in the wearing of an artificial eye. Mules, several years ago, conceived the idea of inserting a glass ball into the scleral cavity after evisceration, then followed the modification of this method by inserting the glass ball in Tenon's capsule after enucleation. Lagrange[17] now proposes the implantation of a rabbit's eye in the capsule of Tenon. His method of operating is as follows: (1) In removing the diseased eye a thread is passed through each of the recti muscles in order that they may be within easy access of the surgeon. (2) All hemorrhage must be stopped before inserting

the rabbit's eye. (3) The rabbit's eye is introduced into Tenon's capsule and the recti muscles are tied in front of it in pairs. (4) The conjunctiva is now sewed over the muscles. With this operation Lagrange claims to have obtained an excellent stump in eight out of eleven cases.

Haberkamp[18] reports the successful results following two cases of glaucoma operated on by paracentesis of the anterior chamber by the actual cautery—one a case of chronic glaucoma and the other of absolute glaucoma. The advantage of the actual cautery over the knife is that several days must elapse before the opening is closed, thus giving the secretory and excretory functions more time to return to their normal condition. The advantages claimed over iridectomy are that less preparation is necessary for the operation, and also less expense.

Instruments and Devices.—Each year brings the introduction of a score or more of new instruments, and the past year has been no exception to this rule. For lack of time I will call your attention to but two of these: (1) Sach's lamp for transillumination of the eye, a full description of which is given by Thompson in the *Ophthalmic Record*[19]. The lamp consists essentially of a 25-candlepower light, extending from the side of which is a cone-shaped projector consisting of a solid glass rod. The whole, except the end of the projector, is covered with a hard-rubber shell. In using the lamp the cone is placed against the sclera, previously cocainized, or against the upper or lower lid. With this lamp intra-ocular conditions of the ciliary and choroidal regions can be readily observed. (2) The Gonioscope, an apparatus devised by Dr. Shute[31], of this city, a full description of which is given in the *New York Medical Journal*. This little device, to use the inventor's own words, is for the purpose of noting the varying angles made by the optic axis (in different positions of adduction and abduction) with the lines of force (muscular lines) of the two obliques and of the superior and inferior recti, and for aiding, therefore, in understanding the theoretical effects of contraction of a single one of the above mentioned muscles. Incidentally it also helps one to grasp the facts of torsion.

Ocular Therapeutics.—During the past several years attempts have been made to carry out a serum method of treatment for diseases due to the streptococci, staphylococ ciand pneumococci.

The results reported so far, are not altogether favorable, and Zur Nedden[20] and Paul[21] have published a number of reports adverse to the use of Roemer's pneumococci-serum.

Among the newer remedies radium, perhaps, is second to none in importance. In the use of radium, Darier[22], of Paris, is unquestionably its strongest advocate, and after his many successful experiments with the remedy, he reports that exposure to its rays rapidly removes small cutaneous growths, promotes the absorption of blood extravasted in the tissue of the eyes, aids in restoring the functional activity of motor nerves in recent, but not in old and atrophic cases, and especially possesses marked analgesic action in rheumatic iritis, specific choroiditis with orbital neuralgia, and ophthalmic migraine.

Beck[23] and Falto[24] each reports several cases of trachoma in which the rays emanating from radium were used with good results.

Kirchiner[25], in an interesting article, states the cosmetic advantages of healing palpebral carcinoma with radium, and describes in detail his method of procedure.

Dr. Abbe, of New York, in an interesting talk to this Society last Spring, showed by numerous models and pictures the excellent results he had obtained by the use of this remedy, on cutaneous growths on the face and eye-lids.

X-ray Therapy.—C. S. Bull[26], after studying reports of cases of malignant diseases treated by the x-ray, does not seem to be favorably impressed by this mode of treatment. He states, however, that the x-rays do sometimes exert a marked effect on carcinomatous growths of a superficial character, but that the efficiency of the rays grows less rapidly with the depth from the surface. Bull criticises the unwarranted enthusiasm with which new agents are often grasped, and the extravagant claims made of their value.

Oram Ring[27], at the last meeting of the American Medical Association, contributed an interesting study on "The Value of X-rays in Ocular Therapeutics." After quoting the experiences of a great number of investigators, he reports a number of cases, including sarcoma, trachoma, vernal conjunctivitis, congenital nevi, chronic conjunctivitis, glioma, gumma, scleritis and episcleritis, corneal ulcers, uveitis and tuberculosis of the conjunctiva which have been cured or greatly helped by this method of

treatment. In closing he stated the following conclusions: (1) X-ray therapy marks a great advance in the treatment of superficial epithelioma and rodent ulcer of the eye-lids, and can usually be relied on to effect a cure. (2) If unsuccessful, then electro-chemical sterilization may be utilized, or, finally, excision with or without plastic operation. (3) X-ray treatment has proven of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result. (4) A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. More radical operative procedures with subsequent ray application being indicated in event of primary failure. (5) X-ray treatments usually exert an anodyn influence on malignant disease of the eye-lids and orbit, but are occasionally reported to cause exacerbations of pain. (6) Noteworthy progress in the treatment of trachoma has been effected by the utilization of x-ray therapy. It should invariably be utilized if ordinary methods fail. (7) The weight of evidence indicates the positive value of x-ray treatment of vernal conjunctivitis. (8) There is evidence which points to the value of x-ray therapy in chronic conjunctivitis (Kassabian), scleritis, episcleritis (Pardo), traumatic uveitis (Jackson), conjunctival tuberculosis (Stevenson), corneal ulceration (Dennett), Glioma (Hilgartner and Würdemann) and gummata (Parker). (9) It is believed that the rays will cure malignant diseases involving the cornea and conjunctiva, provided treatment is applied sufficiently early. (10) The treatment of congenital nevi by the rays is likely to prove effective and should be exhausted before electrolysis or radical operation is considered. (11) Further testimony must be accumulated before an authoritative statement is possible of the effect of x-rays in painful types of iridocyclitis and glaucoma and other ocular diseases.

Atmo-therapy.—From time immemorial the value of hot fomentations, compresses and poultices in inflammatory conditions of the eye has been recognized. In these remedies the initial temperature is not maintained, nor do the medical agents come into direct contact with the eye. To overcome these objections, M. Golesceano[28], of Paris, has introduced an instrument by which warm or hot vapors can be applied directly to the eyes. This instrument consists essentially of a vapor pro-

ducer connected by an elastic tube with a vessel containing pure or medicated water, the temperature of which is maintained by a spirit lamp. The tube terminates in an enlargement which fits the contour of the orbit. The apparatus seems adapted to the applications of hot medicated vapors to the eyes in conjunctivitis, corneal and sclerotic inflammations, and possibly for the treatment of more deeply seated troubles.

General Therapy.—Dionin is becoming more extensively accepted as an extremely valuable agent in a large number of external and internal diseases of the eye. The increasing popularity of preparations of the suprarenal glands should only be mentioned to remind us of occasional unfortunate results that have attended their use. In a case of chronic glaucoma, Senn[29] reports an exacerbation following the instillation of adrenalin. Alypin as a local anaesthetic is commented upon favorably by several investigators. Stovaine, also a new anaesthetic, appears to have many supporters, especially in subconjunctival injections. Novocain[30], another local anaesthetic, is described and recommended by Braun. It is less toxic than either cocaine or stovaine. The effect from this new anaesthetic, however, is so short that it cannot take the place of cocaine.

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Dr. Belt said that the essayist had covered the field very well indeed. He wished to disagree with the conclusions of some of the investigators whose work had been reported in the review. In so-called new discoveries, the discoverer is always too anxious to prove his point, and it usually takes several years to determine the actual value of the work.

He criticised the assertion that trachoma is only a severe form of follicular conjunctivitis; many cases of follicular conjunctivitis may be seen which appear worse than mild trachoma, and the difference seems to be proven by the fact that such cases may be cured by treatment which has no effect upon trachoma.

He also differed from the investigator who believes that pinguecula is always the primary lesion of pterygium.

In myopia, full correction cannot always be given ; myopics of high grade especially are unable to bear full correction. In low grades, however, it can be borne and should always be given.

The treatment of conical cornea with the hot-air cautery does not meet with his approval. He thinks this new instrument must be much more difficult to control than the actual cautery.

Paracentesis with the actual cautery in glaucoma seemed to him a method to be condemned; personally he could not be induced to try it.

The x-ray and radium have not proved as hopeful in his hands as had been anticipated. Some temporary improvement had followed the x-ray treatment of a rodent ulcer of the lower lid, but eventually the method had to be abandoned. He felt assured that no treatment which required any length of time in application should be used in superficial epithelioma; no time should be wasted before completely removing such growths.

Dr. Butler thanked Dr. Polkinhorn for his interesting résumé. He wished to call attention to the fact that the paper was merely a review of progress in ophthalmology, and that Dr. Polkinhorn was not in the position of indorsing any of the statements made in his paper and could not fairly be criticised therefor. The object of the paper was simply to let the members of the Society know what is being done in this particular line.

An interesting thing which should claim attention is the work of Dr. Coleman, of Chicago, in the application of electricity, in the form of high-tension galvanic and sinusoidal currents, for various ocular affections. He claims very good results in many cases, and his method should receive further investigation.

The best progress of the year has been the improvement of technic in old procedures. At the next meeting of the American Ophthalmological Association a symposium is promised upon the technic of cataract operations.

Dr. Belt disclaimed any intention of criticising Dr. Polkinhorn personally for any of the statements made by him.

Dr. O. Wilkinson said that the otherwise thorough review should have mentioned the recent paper of Lewis Dixon on Latent Asthenopia. In seeking the reason for the continued suffering of so many patients from asthenopic symptoms after apparently thorough refraction, he finds that not all defects are disclosed by prolonged examination, even under the influence of cycloplegics. If further examination be made after the lapse of some time, further or different defects will be discovered which remained hidden at the first.

Dr. Wilkinson believes that full correction is proper in all cases of myopia, especially in the young; almost all cases will accept full correction if they are taught and encouraged to make use of their accommodation.

In speaking of transilluminating lamps, Dr. Polkinhorn had failed to mention that of Wooderman, of Milwaukee, which is the best Dr. Wilkinson has seen.

Dr. Butler's remark about cataract operations reminded him that many surgeons are now delivering the lens in its capsule—in his opinion, a distinct improvement.

Dr. Kober said that the Japanese experiments, referred to by Dr. Polkinhorn, upon the septic effect of saliva upon the eye, appeared to have been anticipated by some American investigations some twenty years ago. Sternberg demonstrated sputum septicaemia at that time and isolated the diplococcus, though he had not the fortune to recognize its etiological relation to pneumonia.

Dr. S. B. Muncaster said that he has recently used dionin in a number of cases with excellent effect.

Dr. Jas. Stuart said that he had used alypin in a few cases, but had discarded it on account of its irritating properties.

Dr. Polkinhorn thanked the speakers for their remarks. He agreed with Dr. Belt that trachoma is a different disease from follicular conjunctivitis.

He also finds alypin undesirable because irritating. When freshly prepared its irritant property is not so marked; except for this quality it would be very useful, as it is anaesthetic without dilating the pupil.

In reply to Dr. Kober, he said that Hotta's experiments are

of interest as demonstrating a decided difference in the virulence of saliva when introduced into the interior of the eye and when introduced between the layers of the cornea. They bear little analogy to the Sternberg experiments.

GLOSSITIS: A STUDY OF THE LITERATURE FROM 1816 TO 1906 AND REPORT OF A CASE.*

By A. B. BENNETT, Jr., M. D.,

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My attention was first drawn to this disease by a case in my private practice, a report of which I have added to this paper, and although the attack was of only moderate duration, yet the symptoms were so severe and the patient so extremely ill and the information from the text books so scant that I afterwards made a careful study of all the monographs and case-reports in the English language now at the Surgeon General's Library.

This study commenced with the first case-report in 1816.

During the following ninety years there were 145 cases reported. The data found seemed to me to be sufficiently interesting to bring to your notice this evening. No doubt some of my hearers have had experience with this disease, and I trust a full and interested discussion will follow.

Glossitis is an inflammation of one or both halves of the tongue, occurring more frequently in the acute than in the chronic form, much oftener in males than in females, and usually during good health. It is characterized by pain, tenderness and swelling of the tongue, salivation, interference with speech and deglutition, and more or less prostration. In examining this list of cases I found that there were eight that suffered recurrent attacks. In regard to the state of health in which the patient was when attacked with glossitis, I made the following list, using the terms of the reports: Strumous, 1; convalescent from fever, 2; delicate, 2; debauched, 2; fair, 5; poor, 6; unmentioned, 12; good, 115; total, 145; which shows very decidedly how much more frequently it occurred in persons of good health than others of weakened constitutions or poor health.

* Read before the Society of Ophthalmologists and Otologists, of Washington, D. C., October 19, 1906.

As regards sex, there were in females, 31; males, 110; unmentioned, 4; total, 145. This difference is undoubtedly due to a fact well recognized among dentists, that a woman's mouth is much cleaner than a man's, speaking, of course, of a general average. Man's habit of chewing tobacco, smoking cigars, cigarettes and pipes, picking his teeth with a tooth pick dragged out of some odd corner in a pocket, and his wholesome aversion to suffering the benefits of a dentist's chair, certainly indicate many opportunities for the introduction of bacteria into the mouth and irritating or wounding the mucosa of the tongue. Another explanation lies in the fact that many of these attacks followed exposure, etc., and it is there again that the male sex would be in the majority. There seems to be no time in life that is exempt from glossitis, as seen by the following list: 9 months, 1; 18 months, 1; 6 to 8½ years, 7; 12 to 17 years, 13; 18 to 28 years, 36; 29 to 39 years, 28; 40 to 50 years, 15; 51 to 60 years, 8; 61 to 70 years, 4; at 80, 1; young, 7; middle life, 1; unmentioned, 23; total, 145; which shows that it has been recorded as occurring at as early an age as nine months and as late in life as eighty years, but that the period when it occurred most often was between the ages of eighteen and thirty-nine.

Dividing the ninety years into decades, I found the number of cases reported in each decade as follows: 1816-1825, 5; 1826-1835, 13; 1836-1845, 6; 1846-1855, 30; 1856-1865, 20; 1866-1875, 22; 1876-1885, 22; 1886-1895, 19; 1896-1905, 5; undated, 2; total, 145. This would seem to show that the increase in the case-reports for the first four or five decades was probably due to the increase in the tendency to report and publish unusual cases, and the decreasing number for the last three or four decades being due to an actual decrease in the number of cases, probably the result of better care of the mouth, a more popular use of the dentist, and the ever increasing number of cleansing and antiseptic mouth washes, tooth pastes and powders.

The number of cases of glossitis in the various months or seasons was as follows; December, 5; January, 3; February, 12; March, 3; April, 11; May, 7; June, 10; July, 10; August, 4; September, 9; October, 7; November, 6; total, 87; or for the Winter, 20; Spring, 21; Summer, 24; Fall, 22; total, 87. This includes all the case-reports that mentioned the month or

season, and would seem to indicate that summer was the season when it is most prevalent, although the largest number in any one month is in February.

ETIOLOGY.—Although often termed idiopathic glossitis, I find in studying these case-reports many etiological factors mentioned.

The cause most frequently stated was exposure to wet and cold, or to great heat with exertion followed by rapid chilling, and one case was caused by exposure during menses.

Various wounds and erosions within the mouth, as ulcers of the cheek, irritation from a buried tooth-brush bristle, a pimple on the tongue, infected wounds of the tongue, tooth bites, as during epilepsy, and the fracture of the inferior maxilla with a fistula into the mouth; I found recorded also as causes the stings of insects, burns, scalds, caustics and operations. Local irritants may produce glossitis, such as excessive smoking, use of a short-stem pipe, chewing tobacco, presence of bad or jagged teeth, false teeth, and one case is reported as being due to amalgam fillings in the teeth. This disease has also been produced by long continued and severe use of the tongue, and one case is reported following great rage and the rupture of a blood vessel in the tongue. Glossitis sometimes follows sore throat, tonsillitis, quinsy, excessive use of mercury, and suppressed menses, and occurs as a complication of erysipelas, scarlatina, thrush, aphtha and variola. Several attacks followed a debauch, and some writers mentioned as incidental causes, actinomycosis, syphilis, tuberculosis, diphtheria and gout.

In this series of cases sixteen were without ascertainable cause, and in forty-six of the cases no mention was made of any etiological factor.

The etiology of hemiglossitis has caused some thought, comment and discussion, and some writers, Duckworth among them, seemed to think that hemiglossitis was a neurosis or due to vasoconstricting and dilating powers of the lingual and chorda tympani, glossopharyngeal and hypoglossal nerves, but there can be no doubt that the inflammation is due to an infection, and the one-sided process is anatomically explained by the presence of that thick, firm, fibrous band, the fibrous septum, which is an excellent partition between the two halves of the tongue, except at the anterior extremity, where it becomes quite thin. In this

paper I have purposely avoided considering the details of glossitis of a specific origin.

PATHOLOGY.—The pathology is that of an acute, violent inflammation. As described by Thèbaud, of Paris, there is a violent injection and swollen lymph vessels; the swelling is chiefly in the intermuscular substance, and there is very little change in the muscular fibers except by the pressure of the surrounding parts. Recovery takes place by resolution or suppuration, and the suppurative process, if not drained early, may extend to the pharynx or larynx. The swelling may be so intense that gangrene occurs, leaving only the stump of the tongue. I could find nothing of a bacteriological research relating specifically to this disease, although Garcia, an Italian, studied two cases of follicular glossitis, finding in the closed follicle the diplococcus of Fränkel and in the ulcerated follicles the staphylococcus pyogenes aureus. In this series I found that of the 145 cases, 97 recovered without the formation of pus, and 48 resulted in abscess, showing a proportion of 2 to 1 in favor of recovery without abscess formation, and the same proportion exists in both men and women.

It was interesting to note the different ways that the inflammation would attack the tongue. That is, in 85 cases the entire tongue was involved at once, of which there was no pus in 66 and abscess in 29. Then there were 36 cases of typical hemiglossitis, 20 of which were on the left side, 12 not forming pus and 8 becoming abscessed; and 16 of which were on the right side, 12 showing no pus and 4 forming abscess; showing that abscess formation was slightly more prevalent in left-sided hemiglossitis than right. A third form of attacking the tongue seemed to be a progressive hemiglossitis, where the inflammation occurs on one side and recedes, then attacks the other side in a similar manner. There were nine cases of this kind, two of which started in the right half and extended to the left; in one case there was pus and in the other none. Seven cases originated on the left side, extending into the right; three of these were purulent and four were not. In 54 cases there was a decided furring of the tongue, varying in description from dark brown, membranous, or likened to a wet chamois skin, sometimes thick and white, and again called creamy. In the hemiglossitis cases this membrane would disappear on the healing side

and form on the newly involved side. In this list 36 showed no suppuration and 18 did, maintaining the general proportion of 2 to 1.

SYMPTOMATOLOGY.—The prodromes, although seldom mentioned, yet have occurred, and the most frequent was a general malaise for a week or more ; some have observed an intermittent submaxillary swelling and other cases have been preceded by an earache, or, after exposure, have suffered with sore throat for several days.

The length of onset is variable, sometimes the attack having fully developed in as short a time as two hours, and in other cases it has been most gradual, taking as long as ten days for the attack to reach its height. The duration period varies with the intensity of the attack from two days to three weeks. In two exceptional cases the duration was 35 and 90 days, respectively. The fever also varies from 99.8 to 104, and in four cases there was an entire absence of fever.

The pulse ranges from 86 to 145. With more or less of the above mentioned prodromes the attack is usually ushered in with rigors, fever, headache, sore throat, anxiety and turgescence of countenance, difficulty and pain in swallowing and speech, foul breath, severe thirst, dribbling of saliva from the mouth, and pain, redness, tenderness, swelling and protrusion of the tongue which shows the prints of the teeth.

The tongue is sometimes furred. This description is an average, the mild type of case having only a little pain and moderate swelling of the tongue, while in severe cases the patient suffers intensely with pain in the tongue and in the ear from the irritation of the chorda tympani. The tongue may become so swollen as to endanger breathing, and suffocation seems imminent, or the teeth pressing on the swollen organ may produce gangrene and sloughing off of the tongue. In many instances the adjacent lymphatics become inflamed and enlarged. In prolonged attacks severe prostration accompanies and is a sequence of the disease.

DIFFERENTIAL DIAGNOSIS.—Mackenzie, in 1881, in a monograph on the subject, mentioned several conditions which might be mistaken for this disease.

These were (1) Salivary Calculus, in which disease the tongue is swollen and inflamed and the patient presents many of the

symptoms of glossitis and is relieved by expelling the calculus. (2) Acute Ranula may present these symptoms, but here the spherical swelling in the floor of the mouth would be the differentiating point. (3) Herpes of the mouth, herpes on the lips, tongue or pharynx will be accompanied by many symptoms of glossitis. In all three of the above-mentioned conditions I believe the inflamed state of the tongue is a true glossitis caused by and complicating the other disease.

Complications.—The complications, as in any disease, usually mean aggravated symptoms or extension of conditions already present. Probably the most frequent and serious complication was the sensation of, and in some cases actual impending suffocation from the immense swelling of the tongue and its pressure against the epiglottis. In the rupturing of an abscess a vein may be opened and a severe hemorrhage result. The adjacent lymphatics may become infected and break down, and even the submental connective tissue become indurated. Or the purulent condition may extend into the peritonsillar or postpharyngeal regions. Recovery may be retarded by a slow evacuation of pus or by the tongue continuing in a swollen state, sometimes requiring rubber supports and a gag to prevent injury from too long pressure from the teeth.

Odd Cases.—These case reports have come from Egypt, India, Germany, Italy, The British Isles and the United States, and among them there are several cases worthy of mention. One in which the inflamed organ apparently healed by resolution but remained tender and indurated for five years, during which time the tenderness and pain were increasing and all manner of local applications were used; finally it was incised, evacuating a large quantity of foul pus, followed by prompt relief and recovery. Another patient had three attacks in two years, and a permanent cure followed the removal of the amalgam fillings from her teeth. A similar instance of frequent attacks was in a woman who had six attacks, as follows : in May, June, July and November of 1867, and June and July of 1869. These attacks all occurred suddenly, there was no suppuration, and after incising the tongue in each attack convalescence was rapid. She was permanently cured by the removal of her false teeth. There was one case of membranous glossitis reported, in which a cast of the tongue exfoliated, general sepsis developed and the

patient died. Two cases of long standing are reported from India. In one case, which had existed for ninety days, there were adhesions between the tongue and cheeks, and as the tongue was being reduced these adhesions had to be severed and kept free. The other case was of chronic glossitis of six months' duration, and was reduced by applications of iodine ointment.

DEATHS.—Of the 145 cases reported in a period of 90 years there were four deaths, a little less than 3 per cent. The first death was evidently due to the debauched state of the patient. In 1854 there was a case reported in which the attack was very severe; the left half of the tongue was incised with only the evacuation of blood, and the patient refused further operative interference and died quietly a few hours later. The autopsy showed everything normal except the tongue, which was swollen and soft and bathed in a sero-purulent fluid, and the upper laryngeal opening was greatly narrowed, death being due to slow suffocation. In the third fatal case there was paralysis of the palate, and the abscess ruptured first on the left side and then on the right. Two hemorrhages occurred, the last one amounting to a pint of blood, and the patient died in collapse. In the fourth fatal case respiration was so impeded that tracheotomy was performed, incision into the tongue proved useless, rectal alimentation and stimulants were used energetically, but the patient sank steadily, dying on the seventh day. Besides these there were two deaths reported by the Germans. In one, tracheotomy was performed and the trachea aspirated, but the patient died two weeks later of pneumonia. The other was that of a laboring woman 57 years old. She was in a cyanotic condition; the tongue was incised and it improved, but general sepsis set in and death followed in three days. The autopsy showed the liver, kidneys and meninges involved.

TREATMENT.—The constitutional treatment is of course limited to a thorough purging, morphia for severe pain; and where there is inability to swallow accompanied by great prostration, rectal feeding is necessary. In former years venesection was extensively used. In chronic glossitis the iodide of potassium proved beneficial. The local treatment of this disease appeals to the physician from the start, and many methods have been used with good results, such as poultices, hot fomentations, inhaling steam; gargles of potassium chlorate or alum washes, and the

application of an eight per cent. solution of silver nitrate were good in mild cases; sal ammoniac fumes inhaled, ice to the tongue, neck and throat, and glycerine was applied as a depletant. In one case the galvanic current applied directly to the tongue produced a cure in thirty-six hours.

Leeches have been applied to the submaxillary region, at the angle of the jaw and to the tongue itself. In another case a seton was used with good effect. By far the most frequently used and most efficient treatment in all types of cases was the prompt use of the scalpel, making one or more deep incisions the entire length of the tongue and well into its substance, followed by frequent mouth washes and gargles.

The bleeding is at first quite profuse and there is a rapid reduction in the size of the tongue, and if pus is present its evacuation also brings prompt relief and recovery to the patient, and the scar results in a mere line. If recovery does not promptly follow, the incisions must be repeated, and if the hemorrhage continues profuse it can readily be stopped by packing the wound. No anaesthetic is necessary.

In hemiglossitis only one side of the tongue is swollen and it rolls over, as it were, so the under surface of the inflamed half is facing outwards and almost upwards, and great care must be used in incising to prevent cutting the ranine artery.

Even though the incision is apparently well on the upper surface of the tongue, after the swelling is gone the scar will be seen on the under surface sometimes close to the fraenum. It must be borne in mind that mild scarifications do more harm than good and always have to be followed by deep incisions. One case is reported wherein the submental swelling and induration were so great that an incision was made in the median line half way between the chin and hyoid bone in an upward and backward direction for two inches, evacuating pus. The complications have to be treated according to their needs. The tongue must be protected from injury by the teeth; where suffocation is imminent tracheotomy will be necessary; and if the purulent condition extends into the lymph glands, peritonsillar or postpharyngeal regions, prompt incision and drainage must be performed. In some of the early writings two forms of treatment were advised that seem rather amusing. One was amputating the tongue to prevent its mortification, and the other was to forcibly reduce the

tongue into the mouth, keeping the jaw closed by a stout bandage ; this second method would soon bring relief by death from suffocation.

CASE REPORT.—The following report of the only case of glossitis that has come under my care, I trust will be of interest to you.

Miss L., age 16, school girl, robust and athletic. Family history negative. Previous history : when four years of age she had diphtheria, after which she had several attacks of rubeola. In May, 1896, when eight years old and during good health, she had an acute illness, commencing in the morning with a soreness in the tongue ; by the afternoon of the following day the tongue protruded considerably out of the mouth and she was very ill and delirious. During the night of the third day while asleep "something broke," she awoke and began talking for the first time in 48 hours. Recovery was very rapid and she was well enough to go about the fourth day. This was unquestionably an attack of acute glossitis, probably with abscess formation.

Present illness : April 25, 1904. For the past two weeks she has been feeling badly, suffering with general malaise, loss of appetite and indisposed to study or exercise. Yesterday a small point on the right of the tongue became quite sensitive and today, when seen for the first time, she complains of pain over the right side of the face and neck, especially at the angle of the jaw and on the right side of the tongue. On examination, temperature 102.3, pulse 100. There was some enlargement and considerable tenderness of the right submaxillary gland and tenderness just back of the angle of the right inferior maxilla. The nasal chambers contained a large quantity of thick, yellow secretion, probably from the maxillary sinuses.

The pharynx was congested and the postnasal space was quite severely inflamed and contained a large inflamed adenoid covered with a thick, white secretion. The tongue appeared normal except for a small ulceration on the right border about half way back resembling very much a canker sore. Twelve hours later I found the patient with a temperature of 104.8 and pulse 112, complaining of great pain, referred especially to the right ear, unable to talk or swallow and having some interference with breathing. The right membrana tympani was normal. A large quantity of viscid saliva was dribbling from the mouth and con-

siderable mucus was being blown from the nose and dropping back into the pharynx. The tongue was severely swollen and tender along its entire length on the right side and was protruding between the teeth. The left half was flat and normal.

April 26, second day, 8 A. M., temperature 104.2, pulse 106, and she had passed a fairly good night and was generally more comfortable. The local conditions were the same except that there was a thick grayish deposit over the right side of the tongue. At 8 P. M. on the same day there was less tenderness at the angle of the jaw and over the glands, and less pain in the ear. The swelling of the tongue and the amount of sinus secretion were the same.

April 27, third day, 8 A. M., the temperature had fallen to 100.6, pulse 72. She was feeling fairly well. The tenderness, pain and swelling on the right side of the tongue were much less and the secretion from the nose and postnasal space greatly diminished. The tongue was commencing to enlarge on the left side accompanied by some pain and tenderness back of the angle of the left inferior maxilla and over the left submaxillary gland.

April 28, fourth day, 8 A. M., temperature 100, pulse 70. The patient was suffering moderate pain over some enlarged submaxillary glands on the left side; also some left otalgia. The left membrana tympani was normal. The right submaxillary glands were free from pain, tenderness or swelling. The tongue, on the right half, was much reduced in size without pain or tenderness and the coating was gone, leaving a red raspberry appearance, while the left half was swollen, tender and covered with a thick gray coating.

April 29, fifth day, 8 A. M., the temperature had risen to 101.6 with a pulse of 84. The patient was suffering with severe pain and swelling on the left side of her face and in the left ear, the left membrana tympani remaining normal in appearance. The left half of the tongue was much larger and more tender than the day before, and on irrigating the nose there was found a marked increase in the amount of sinus secretion.

April 30, sixth day, 8 A. M., the temperature had fallen to 98.6, pulse 70, and the patient was much better and brighter. There was a marked decrease in the size and tenderness of the tongue and submaxillary glands and the anterior half of the coating on the tongue had disappeared, leaving a red raspberry appearance. The next day the patient continued to improve

rapidly, and on May 2, the eighth day, all tenderness, swelling and coating of the tongue had gone and an uneventful restoration to her normal robust condition continued.

The treatment adopted in this case was first a thorough purge with calomel and the frequent use of Dobell's solution as a hot gargle and mouth wash. On the second day I commenced packing the entire neck in ice-cloths and constantly used cracked ice in the mouth and cold Dobell's solution as a mouth wash. The diet was liquid, at frequent intervals. This form of treatment I continued until recovery was well assured.

In addition to this I gave the nose a daily irrigation with warm normal salt solution, freeing the nasal chambers and sinuses of secretion, giving the patient much relief from the sense of insufficient breathing or possible suffocation.

There are a few points about this case which I would like to bring to your attention. Occurring at the age of eight and sixteen, both times in the Spring, in May in the first attack and in April in the second attack. No prodromes in the first attack and decided prodromes in the second attack. Abscess formation in the first, no abscess formation in the second attack. Point of infection evidently in the ulceration on the right side of the tongue. The very high fever, associated with the comparatively slow pulse and clear mind, and inflammation of the sinuses, nose and postnasal space, which were rēexcited when the left half became involved. The following January I examined the patient again and found in the postnasal space entire absence of any adenoid, and in its place a chronic naso-pharyngitis, showing that the presence of the adenoid during the attack of glossitis was purely an acute hypertrophy.

Dr. Bryan said that diseases of the tongue had not received sufficient attention. He recalled a case of streptococcus infection, early in his own practice, in which the inflammation was so intense that it extended to the trachea ; both pericarditis and pneumonia developed, and the patient died. Sometimes the staphylococcus or mercury caused the disease.

Dr. McKimmie reported a case that he had seen four days after its inception ; it was due to a wound of a molar tooth ; the tongue protruded between the teeth.

Dr. Butler reported a case in a man age 70.

Dr. Lamb reported a case in a woman age 22, where the swelling extended from the jaw to the clavicles. There was an ulcer

at the tip of the tongue and two others, one on each side, near the base. She had been treated for two weeks without benefit, by a general practitioner. Dr. Lamb used potassium chlorate and alum, and also washed out the nose and throat daily, regulated the diet and gave a saline cathartic. In two weeks she was well.

A BRIEF STUDY OF MITRAL STENOSIS.*

By THOMAS A. CLAYTOR, M. D.,

Washington, D. C.

My excuse for presenting to you such a well worn subject is the belief that this particular form of valvular lesion is too frequently either not recognized, or is incorrectly diagnosed. This conclusion has been reached after a review of the fairly large number of cases of cardiac disease which have come under my observation in the past fifteen years.

The reasons why mistakes occur are the following: There is, in uncomplicated cases, little or no enlargement of the left ventricle, hence, the apex beat appearing in the normal position has a tendency to disarm suspicion of a serious valvular lesion; the very small area over which the murmur is audible in many cases renders it easily overlooked; the inconstancy of the murmur, on some occasions being clear while at others it is heard only faintly or not at all. So much for our failure to recognize the presence of a murmur; but it may be heard and yet be mistaken for a mitral insufficiency, and indeed such an error is not unpardonable if the heart's action is very rapid, since the first sound in mitral stenosis approaches quite near in character the second, being short and sharp. Then, too, the far greater frequency of the indirect mitral murmur necessarily influences the observer.

Pathology and Etiology.—Obstruction of the opening between the left auricle and ventricle is caused by an abnormal condition of either the ring or the valves themselves or both. This abnormal condition may either be a congenital defect or the result of an endocarditis sustained by the child in utero or at any period subsequent to birth. The majority of cases give a history of subacute or chronic rheumatism rather than an acute articular attack.

*Read before the Medical Society, October 31, 1906.

If the stenosis results from acute inflammatory rheumatism, it is usually associated with a regurgitant lesion which has probably preceded it. A considerably lesser number are due to syphilis, gout or to some other cause of sclerosis.

The mitral orifice may show any degree of narrowing, even to scarcely allowing the passage of a probe. The condition is spoken of as either a funnel or button-hole stenosis, depending upon the shape of the opening. According to Sanson (Allbutt's System of Med.), in children one "button-hole" is seen to eight "funnels," whereas in adults one "funnel" to twenty-five "button-holes."

The left auricle is usually hypertrophied and the right ventricle in more advanced cases.

Mitral stenosis is far more common in women than in men, and in the young, though it may occur in the old.

Symptoms.—That the symptoms of mitral stenosis may be more readily understood it is best to trace the natural sequence of events. Obstruction to the normal flow of blood from the left auricle to the left ventricle is first felt in the auricle. In order to overcome this unusual resistance its walls hypertrophy and at the same time, or subsequently, also dilate to some extent. The amount of dilatation, however, depends largely upon the presence of a regurgitant lesion as well. The overworked left auricle causes the blood to back up in the pulmonary system; this rise in pressure necessitates increased work by the right ventricle with subsequent hypertrophy. The left ventricle receives less blood than normally, so that unless there are other associated valvular lesions or some other cause for hypertrophy, such as chronic interstitial nephritis or arterio-sclerosis, there is no thickening of its walls.

Very naturally the earliest signs of trouble are usually to be noted in the lungs and are due to congestion, either passive or acute; shortness of breath with palpitation on exertion; cough, often so constant and troublesome as to arouse the suspicion of tuberculosis. Later come attacks of pulmonary oedema and haemoptysis though in some cases these are the first indications of cardiac trouble. Failure of the general circulation is not often seen early, but many of the subjects are thin and poorly nourished.

It is not at all unusual for these cases to be diagnosed as pulmonary tuberculosis because of the tendency to bronchitis and pulmonary hemorrhage.

History of a Case.—The following history of a patient brought to me by Dr. Keech will serve as an example: A young woman, a school teacher, apparently in robust health, while out with some friends laughed rather immoderately for some minutes; a cough then began which continued all night and was associated with the expectoration of bloody, frothy material, evidently an attack of pulmonary edema.

Since then, now more than two years ago, she has had a number of attacks of a similar character, on one occasion coughing up pure blood. Dyspnoea on slight exertion has been a constant symptom.

The physician consulted pronounced the case one of pulmonary tuberculosis, but Dr. Keech thought it was cardiac, and brought her to me for an examination, which revealed the following: Apex beat about in the normal position, no thrill noted, no pulsation in the epigastrium, cardiac dulness possibly increased slightly to the right; a very faint presystolic murmur was audible over a small area just above the apex; so small was this area and so faint was the murmur that had it not been for the pronounced symptoms I think it would have escaped my attention. Active exercise about the room brought out the murmur with great distinctness. The cardiac first sound as heard was, I think, almost sufficiently characteristic to make a diagnosis upon; it was sharp and short following immediately upon the murmur. The second pulmonary sound was accentuated, but there was no reduplication either at the base or apex.

In this case the stenosis was not very marked, and interfered in no way with the heart's action except on exertion.

General symptoms such as oedema and ascites are noted only in advanced cases.

Diagnosis.—The diagnosis is based chiefly upon the physical signs, as the symptoms may be so much the same as those of mitral regurgitation as to be only suggestive. Probably the first important point to attract attention is that there is little or no displacement of the apex beat. In other words, there is usually no hypertrophy of the left ventricle in uncomplicated cases of mitral stenosis. The explanation of this fact is simple. An insufficient amount of blood reaches this chamber, hence, there is no cause for dilatation nor occasion for hypertrophy. Of course other associated valvular lesions, or some extraneous cause, such as

chronic interstitial nephritis, might cause enlargement of the left ventricle. Epigastric pulsation is likely to be strong in the more advanced cases from a hypertrophy of the right ventricle, and there may be pulsation in the second and third left interspaces; the latter condition is only seen in children. From careful palpation valuable information is obtained. In the neighborhood of the apex, may be felt usually best with light palpation, besides a more than ordinarily forcible thrust, a diastolic thrill, frémissement cataire, as the French have it. This thrill ends in the cardiac systolic shock. Osler says: "This most characteristic of physical signs is pathognomonic of narrowing of the mitral orifice, and is perhaps the only instance in which the diagnosis of a valvular lesion can be made by palpation alone." I take it that he refers to uncomplicated mitral stenosis, as a thrill may be felt in aortic insufficiency when the "Flint" murmur is present. Percussion may show enlargement of the heart downward and to the right, from a hypertrophy of the right ventricle. Only rarely is there any extension of the dulness to the left in uncomplicated cases. On auscultation there is heard a harsh murmur in the mitral area, diastolic in time and most intense just before the systolic contraction of the ventricles and synchronous with the presystolic thrill. A most characteristic feature of the murmur is that it leads up to and ends in the short, sharp first sound already emphasized, which is so changed as to closely resemble the second sound, for which it may be mistaken. Especially is this likely to occur if the second sound is very faintly heard or not at all at the apex, which, by the way, is a bad sign, as it indicates great weakness of the aortic second sound. Thus the mitral stenotic murmur may be and, I believe, often is mistaken for the mitral regurgitant. In order to prevent this error the time of the murmur must be accurately determined by the finger on one of the vessels of the neck or upon the apex. This absolutely necessary point is not by any means always easy to determine, especially when the heart's action is rapid. When correctly timed and located the only other murmur which might cause confusion would be the "Flint" murmur, which is heard in the same area in about half the uncomplicated cases of aortic regurgitation, and is thought to be produced by the impinging of the regurgitant current on the large anterior flap of the mitral valve, thus causing it to interfere with the flow of blood from the left auricle into the left ventricle.

The presence of a diastolic thrill may further complicate the differentiation. The sharp valvular first sound so characteristic of a true mitral stenosis is, however, usually absent. Owing to the increased tension in the lesser circulation, there is an accentuation of the second pulmonary sound. There is also often noted an apparent doubling or splitting of the second sound, which may be noted at the base or at the apex or in both areas, which most observers attribute to an actual difference in the time of closure of the aortic and pulmonary valves, resulting from the difference in pressure in the two systems. Sansom has suggested that this sound, at least when heard at the apex, is produced at the mitral area rather than at the base, and believes it to be a sound of tension due to the first inrush of blood into the ventricle, such inrush being more forcible and sudden than under normal conditions from the increased blood pressure in the left auricle due to the constriction of the mitral orifice. When this double second sound is heard only at the apex it is thought to mean an early case of the mitral stenosis. As a result of broken compensation many of these characteristic signs may be missing, and even when compensation is perfect, they are not all to be detected in every case. The most important are the presystolic thrill, the presystolic murmur and the short, sharp first sound heard at the apex. Some experienced clinicians claim to be able to make a diagnosis with comparative certainty alone upon the peculiar first sound as heard at the apex. The pulse is small, rather slower than that of mitral regurgitation and often irregular. Among more unusual signs associated with mitral stenosis may be mentioned the pulsus differens, due to pressure of the greatly distended left auricle on the left subclavian artery (Popoff) and paralysis of the left recurrent laryngeal nerve from the same cause. With regard to treatment I would only caution against the often harmful administration of drugs until some real good can be expected from them. These patients should be warned against all unnecessary exertion.

Dr. Fremont-Smith said that the essayist had brought up a subject well worn but not sufficiently well worn into our minds. The condition is of unusual interest, partly because of its rarity and partly because of its habit of not preserving the same physical signs for any length of time. An illustrative case was that of a lady who had been traveling in Europe with gradually failing health; she bore with her letters from several eminent men

on the other side stating that her heart was in good condition. She came to New York, and Delafield happened to examine her at just the proper time to detect the physical signs. Dr. Fremont-Smith attended her during her last days and had the opportunity to observe very well the fugitive character of the signs. These fugitive physical signs, the peculiar thrill, the rumbling murmur and the absence of enlargement of the left ventricle, are very characteristic of the condition.

Another noteworthy case had been seen at Hopkins; this patient had been in the hospital seven times for mitral insufficiency with broken compensation. His history nowhere mentioned a presystolic murmur. Such a murmur was now to be heard, and McRae confirmed the finding, though he had not observed any such sign in previous examinations. Here then was the development of mitral stenosis in the course of an advancing heart disease.

Dr. J. D. Thomas said that he could hardly agree with the essayist as to the frequency of mitral stenosis. The general impression is that the condition is infrequent, and certainly it is rarely found at autopsy. As a rule the stenosis is due to narrowing of the mitral ring, but it is sometimes produced by the encroachment of vegetations. He had reported such a case before this Society, and had found a second case in which no physical signs were heard during life. An interesting question is the relation of tuberculosis to this lesion. It has been held that in heart lesions, tuberculosis is not often seen with mitral insufficiency, but is apt to accompany mitral stenosis. The infrequency of tuberculosis with heart lesions in general has been explained by presuming that the increased blood contents of the lungs reduce the chances of infection; if this be so, then tuberculosis should be less frequent with mitral stenosis than with insufficiency. This association of tuberculosis with stenosis must be due to a general low resistance of the patient with this lesion. A recent report from the Phipps Institute gives in the autopsy tables a few cases associated with mitral insufficiency, but none with stenosis; clinically, also, insufficiency is found more often than stenosis. Dr. Claytor spoke of the difficulty of making the diagnosis. This is borne out in Dr. Thomas' experience in a large clinic where he has for a long time been on the outlook for the lesion and has never found it. Differentiation is particularly difficult when the lesion is in conjunction with mitral insufficiency.

The prognosis is most important, and warning should always be given of the gravity and progressive character of the disease.

Dr. S. S. Adams said that among the reasons given by Dr. Claytor for the apparent rarity of mitral stenosis, the statement that the profession does not recognize the condition probably should not be taken for the criticism that the profession *cannot* recognize it. Dr. Adams himself believes that in children the condition is very rare. He has never seen a congenital case at

autopsy ; and if the condition is at all frequent, he certainly should have seen it among the many autopsies at the Children's and Foundling Hospitals.

No one could set out the signs of mitral stenosis more clearly than Dr. Claytor had ; the failure to recognize the lesion is due to the fugitive character of the signs and the frequent absence of them altogether. If all signs are present the diagnosis is easily made. But it is not to be wondered at that practitioners are so frequently puzzled in many cases of suspected heart disease where the signs are so fickle. After compensation fails, with auricular dilatation and right-side involvement, then murmurs appear and the diagnosis may be made. But even then complicating murmurs may add to the difficulty, especially in congenital cases.

Dr. Carr inquired of Dr. Claytor what importance he attaches to the sphygmogram as an indication of mitral stenosis. Dr. Carr's impression has been that the tracing should be characteristic on account of the atrophied left ventricle. He believes that the apparent rarity of mitral stenosis is in part due to the inability of many who conduct post mortems to recognize it. He would not trust his own judgment, notwithstanding the number of autopsies he has preformed.

Dr. D. S. Lamb said that he has found at autopsy very many cases of mitral stenosis in which no doubt could be entertained as to the narrowing of the orifice. The induration about the ring is always very characteristic. Many patients go along without suspicion of any heart lesion until some intercurrent affection carries them off. His impression is that mitral stenosis is not often congenital ; we usually look for congenital lesions on the right side. His experience has been that there seems to be a certain degree of immunity to tuberculosis in valvular disease.

When we reflect upon causes and conditions, it is not to be wondered at that pure lesions are seldom found. Unless death occurs very soon after the primary focus is established, pure lesions cannot be expected. The primary disease process is fibrosis, with rigidity ; often calcification, and narrowing. The result is a small opening with leaking both to and fro. After these events follows the usual train of hypertrophy, dilatation and stasis. His experience has been that mitral stenosis is very apt to be associated with aortic stenosis ; and he has found the lesion to be frequent post mortem though infrequently observed during life.

Dr. Carr explained that Dr. Lamb's remarks rather bore out his own statement. Dr. Lamb *does* find mitral stenosis often, but Dr. Lamb is also able to recognize it. Dr. Carr himself had examined the heart in many cases dead of other causes, and had been unable to determine whether the mitral ring was big enough or not.

Dr. Lamb said that the mitral orifice should admit two fingers.

Dr. E. B. Behrend said that all gradations in the size of the mitral ring may be met with. In many cases both stenosis and insufficiency coexist. The variability of physical signs of mitral stenosis is due to variations in the state of the myocardium of the left auricle. He had often seen mitral stenosis in women associated with a grave progressive anaemia, not, however, pernicious anaemia. Such cases go on to formation of vegetations, with embolic sequels.

Dr. Claytor said that he wished to agree with Dr. Adams as to the rarity of congenital mitral stenosis; many doubt its occurrence at all. If found, it would be due to endocarditis contracted *in utero*. Dr. Claytor had no desire to criticize the profession for not recognizing the lesion; his paper had grown out of his own difficulties with its recognition.

CASE OF SPLENECTOMY.*

By J. THOMAS KELLEY, M. D.,

Washington, D. C.

Miss M., white, age 35; first menstruated at 13; menses regular, scanty, no pain. She lived in a malarious part of Virginia; had malaria as a child, and at 7 years had what was pronounced an "ague-cake." Has always been nervous. One year ago was very ill, and was treated for Bright's Disease by Dr. W. T. Brown, of Burnt Mills. The albumen gradually disappeared from the urine, and she returned home comparatively well.

Eight weeks ago she was taken ill with chills and fever accompanied by violent pains in the pelvis. Dr. —. —. Chinn, of Virginia, was called and discovered a tumor in the pelvis. She came to the Sibley Hospital September 2, 1906. On examination a tumor was found, occupying the pelvis and reaching to the umbilicus and adherent to the uterus. From the shape, it was diagnosed "an enlarged and movable spleen." The operation was done the

* Reported, with specimen, to the Medical Society, October 10, 1906.

next day. A median incision was made in the usual site for ovariotomy. The spleen was about three times the normal size and adherent to the bladder by very dense adhesions and to the uterus by smaller ones. There were also numerous adhesions to the omentum and intestines. On separating the spleen from the bladder, the denuded surface of the latter bled very profusely and required quite a deal of suturing to control. The pedicle of the tumor, which was twisted on its axis, was about two and one-half inches wide, one inch thick and four inches long, after the organ had been released from its position in the pelvis. It was clamped, cut through and the spleen removed. The pedicle was ligated with No. 3 cat-gut in three places, and sewed over at the cut surface. The rectal temperature was as high as 101 degrees for five days, and the patient was very nervous. Again, during the third week, it rose to 101 degrees for four days, but fell to normal on the administration of large doses of quinine. During the first two weeks there were night sweats; except for these, the recovery was uninterrupted. Unfortunately there was no blood examination at any time.

The enlargement of the spleen was evidently due to continuous malarious poisoning.

Dr. Acker asked upon what basis Dr. Kelley had made his diagnosis, and **Dr. Randolph** inquired as to the indications for removal of the spleen. Dr. Kelley replied that he had made the diagnosis upon the shape of the tumor; the thin edge, with the characteristic splenic notch, could be distinctly felt. He had borne in mind the possibility of nephroptosis, but excluded that explanation on the ground that the mass appeared to be in too close contact with the abdominal wall for a retroperitoneal organ. The indications for the removal of the spleen were that the organ was firmly adherent to the uterus, occasioned continuous and distressing pain, gave rise to very annoying bladder symptoms, and as the patient had had albuminuria, it was thought that pressure upon the ureter might be responsible for it.

A CASE OF INTERSCAPULOTHORACIC AMPUTATION FOR SARCOMA OF ARM.

By E. M. HASBROUCK, M. D.,

Washington, D. C.

Malignant disease of an extremity invariably necessitates amputation, and the rule is to amputate above the neighboring joint in order to get as far away as possible from the seat of disease and probable affected tissues.

Removal of a leg, a thigh or an arm is of daily occurrence and merits mention only when complicated in some unusual way, but the interscapulothoracic amputation—removal of the entire upper extremity—while it is a well recognized surgical procedure and has been done many times, is still a very rare operation ; moreover, so far as I have been able to ascertain, this is the first time it has ever been done in this city, hence my excuse for presenting the case in detail together with the technique. That I cannot report a brilliant ultimate result is a lasting regret to everyone who watched the case through its early days of good promise,—but cerebral embolism is a thing that has to be reckoned with sooner or later, and in my case carried off final honors.

The chief indication for this operation is malignant disease of the humerus, or in or about the shoulder joint, and White asserts that it is the justifiable tendency of surgeons at the present day to adopt this operation in all such cases.

The operation while a formidable one is yet attended with a low mortality. Schultz in his collection of cases places the mortality at 19.23 per cent. before 1875, but it must be remembered that that includes the cases before the dawn of either asepsis or anesthesia. Since that and up to 1896 he places it at 13.04 per cent. or an improvement of 6.19 per cent. Berger, who perfected the operation and whose method is generally followed, reports his table with a mortality of 5 per cent., while Fowler's table compiled in 1900 gives eight deaths out of 72 collected cases—11.1 per cent.; Konitzer collected 24 cases between 1890 and 1899 with only one death, a mortality of 4 per cent.; and Douglas, in the *N. Y. Medical Journal* for 1906, states that there have been 153 cases since 1887 with 12 deaths, a death rate of 7.84 per cent.,

and excluding certain unfavorably complicated cases, 5 per cent. The present mortality is probably about 6 per cent., and should not go over 10 per cent.

The average duration of life following the operation is three years. Jeanbrun and Richè have secured records of 24 persons alive after five years and one after 26 years.

As regards recurrence of the disease for which the operation was done, 46⅔ per cent. are reported as non-recurring at the end of one year,—but as this is entirely arbitrary and altogether too short a time to form an estimate we find, by carrying it a little farther, that it rapidly falls to only about 8⅓ per cent.

The oldest patient I could find record of was 74, the youngest, 10 years of age.

My own case is as follows:

Sallie C., colored, married, æt. 65, mother of five children. Family history practically negative. Her parents lived to middle age, her mother not being in good health, from cause unknown. The patient herself had always been in the best of health with the exception of her tumor. About the age of 25 she noticed a small lump about the size of the end of her thumb on the inner aspect of the right arm at the bend of the elbow, that remained for a number of years about as it first appeared without causing any inconvenience. No cause can be assigned for its occurrence. Five years ago it "arose and burst," as she described it, and two more lumps appeared, one after the other. Since then they have been growing larger. Last fall they began growing quite rapidly and became cauliflowerlike and very painful, the pain gradually increasing in severity.

She had long refused all efforts to induce her to have the arm removed, but at last was willing to be relieved in any way that seemed best, and was referred to me by her family physician.

She was strongly built, well nourished but anemic. On the right arm on the inner and posterior aspect was an ulcerated, suppurating, cauliflower tumor-mass divided into three separate bunches, extending from the midddle of the arm to the middle of the forearm. The mass bled easily and had a typical odor. The hand and wrist were badly swollen, but above the tumor-mass the arm did not appear to be involved. One small axillary gland could be felt, the size of the thumb nail.

A small piece was excised from the tumor and submitted to

Dr. J. B. Nichols for examination; the pathological report was "Large round cell sarcoma."

The interscapulothoracic amputation was decided upon because of the malignancy of the growth, and because it was deemed best to keep as far away as possible from the seat of disease in securing flaps.

TECHNIQUE OF OPERATION.—Nitrous-oxide-ether anesthesia by Dr. Abbe. The first incision was made from the acromion to the insertion of the sterno-mastoid muscle, and the periosteum of the clavicle with its muscular attachments was dissected off: the clavicle was next divided with a Gigli saw at the junction of the middle and inner third. After freeing it from all attachments it was grasped with heavy forceps and forcibly twisted back and removed from its union with the scapula. The subclavian artery and vein were next exposed by a careful dissection and separated. Two heavy silk ligatures were placed on the artery and tied, and the artery cut between them. Three additional ligatures were placed on the proximal end for safety, as the

vessel seemed very friable. The arm was then elevated to allow it to empty itself, and the vein was tied and cut between ligatures. A second incision was now made from the acromial end of the first incision around the shoulder, across the axilla and terminating at the lower angle of the scapula, and the tissues divided. The big nerve trunks of the brachial plexus were injected with a few drops of a one per cent. solution of cocaine before division, after the method of Crile and Cushing, and divided at the point of injection, and the axillary gland and surrounding tissues were removed. A third incision was now carried from the junction of the first and second over the dorsum of the scapula and meeting the second at the lower angle. The scapula with its muscular attachments was quickly dissected out, bleeding points ligated; a hot compress stopped all oozing, and the wound was closed with interrupted silk-worm gut, with a rubber-tissue drain in the lower angle. There was absolutely no shock, and no loss of blood save a little remaining in the removed extremity, and the patient left the table in excellent condition. Time, 1 hour 10 minutes.

The drain was removed on the third day and recovery was uneventful up to the seventh day, the patient sitting up on the sixth. On the seventh day she went into a profound stupor, at first not clearly understood, but soon recognized as due to cerebral embolism. July 4, the third day of stupor, the condition was much improved and the stitches were removed. July 9th she was much improved, smiled and talked a little. 11th, embolism symptoms much worse, face drawn, involuntary stools and urination; limbs responded slowly or not at all to irritation; she took nourishment but could not talk. On the 12th the temperature suddenly rose to 108.6 and as quickly dropped again, showing that the heat centers were involved, as there was no corresponding rise in either pulse or respiration. She died July 15, three weeks from day of operation.

The important points in the operation are, the control of hemorrhage and the prevention of shock from dividing the great nerve trunks. Death from this operation will usually be due to shock with or without hemorrhage. In my case it was shown that shock could be prevented entirely by controlling hemorrhage so that practically no blood was lost, and by adopting the method of Crile and Cushing, of injecting a weak solution of cocaine into

the large nerve trunks of the brachial plexus before dividing them. It is a well known fact that one of the great factors in shock from surgical operations is the division of the great nerve trunks, the brachial plexus, the sciatic and anterior crural nerves. Crile has shown by his experiments and practical work that if, before dividing the nerves, a few drops of a weak solution of cocaine be injected directly into the nerve trunk, the division of the nerves has no perceptible effect on the pulse rate or volume. Cushing has written at length on the prevention of shock in major amputations by the use of this method, and reports two cases of interscapulothoracic amputation in which he had used it with apparent success. Lund reports a case of this form of amputation for sarcoma in which he followed this method, and in his opinion it was very effective.

The difficult part of this operation, and the part which took the longest time, was the ligating of the subclavian artery and vein preliminary to removing the extremity. The dissection was necessarily slow and careful, but was much facilitated by the subject not being large or fat, and by the entire absence of disease in the clavicular region, so that the dissection was through normal tissues.

The control of hemorrhage is an all important factor in this operation, and that method which most speedily and safely exposes the third portion of the subclavian artery and vein should be adopted. The method of resecting the clavicle at its inner third was chosen because no good reason was seen for adopting the more dangerous method of disarticulating the clavicle at the sternal joint, and the operation as outlined is essentially that described by Berger in 1887.

LeConte enumerates as many as eight or nine different methods of controlling hemorrhage, several of them depending upon compression of the subclavian vessels with or without resection of the clavicle. Most of these are uncertain and unsafe. There are only three surgical ways to efficiently control the hemorrhage: 1. Ligation without resection of the clavicle. 2. Ligation after removal of the outer $\frac{2}{3}$ of the bone. 3. Ligation after disarticulation of the clavicle from the sternum and removal of the entire bone. LeConte has written at length advocating this latter method. His reasons are that it is needed to give the best exposure and decreases the accidents of ligation. The writer can

see no reason for choosing this method except in cases of large tumors encroaching upon the tissues at the base of the neck, in which cases it may be doubtful whether any operative procedure is justifiable. Disarticulation of the clavicle at the sternal end must invariably be a more dangerous procedure than resection at the junction of the inner and middle thirds; the risk of wounding the innominate vein or the pleura is considerable; the attachments of the sternomastoid are practically gone, and the deep fascia of the neck in all probability opened. From the writer's limited experience it would seem that the method of choice in those cases where operation is justifiable, is the subperiosteal resection of the clavicle at the junction of the middle and inner thirds preliminary to ligation of the vessels. This method will give room enough.

As regards the statistics previously quoted, if the patient is in sound physicial conditions in other respects, and the growth is limited to the arm or shoulder, with little infiltration into the tissues at the base of the neck, and if in the operation proper technical attention is given to the control of the hemorrhage and the prevention of shock as described above, it would seem rational to say that in the great majority of cases this operation can be done with safety, probably with just as much safety as amputation of the upper extremity at the shoulder joint.

Dr. Balloch said that he had had the pleasure of witnessing the operation and of watching the progress of the case. He had been struck by the ease with which the subclavian was exposed for ligation by resection of the clavicle; Dr. Hasbrouck certainly made no mistake in choosing this method of approach. Dr. Balloch's interest had been especially aroused by the complete absence of shock following the cocainization of the nerve trunks; the case completely bore out the value of the nerve block as advocated by Crile and Cushing. The site for amputation was well chosen, and the unfortunate termination from embolism could not be foreseen and cast no discredit upon the operation. Dr. Hasbrouck was to be congratulated upon the ease and smoothness with which the operation was done.

Dr. Jas. F. Mitchell said that he was particularly interested by the remarks on cocainization of the nerve trunks. He had had the pleasure of assisting Cushing in his first cases in which the method was used. Dr. Mitchell recalled very well a case of round-cell sarcoma of the humerus: in the amputation the brachial plexus was divided twice; at the first division the pulse chart

showed a very sudden jump in the rate, with evidences of shock; at the second division of the nerve trunks, the same phenomena occurred and the patient was taken from the table in collapse. He subsequently recovered. The second case was encountered while hunting in Pennsylvania, and the man was persuaded to go to the Johns Hopkins Hospital for operation. The condition was sarcoma of the shoulder following an injury. The operation was done by the method of Crile, and while the same technic was followed as in the first case, under cocainization of the nerve trunks the pulse rate ran level throughout the whole operation, which consumed the same length of time as the other. Since then he had himself done the amputation twice and had witnessed two others, all without shock, which is the all important accident to avoid.

Most of the cases of sarcoma in this region which he had seen had recurrences after the amputation; the prognosis, therefore, is unfavorable.

CASE OF ECTOPIC PREGNANCY.*

By J. THOMAS KELLEY, M. D.,

Washington, D. C.

Mrs. A., white, age 32; menstruated first at 14; always regular, medium amount and painful.

She married two years ago; no children, no miscarriages; very anxious for children. August 24, 1906, was the time for menstruation and there was a slight show for a few minutes. Two days after, having walked in the country a good distance, the flow came on very profusely with violent pains in right side. A physician was called in and made a diagnosis of appendicitis and put on an ice-bag. She remained abed more or less during the next month, bleeding continuously from the uterus. Dr. Acker called me in to see her. On examination I found the uterus slightly enlarged, a moderate amount of flow, and a small mass on the right side, probably a tube. There seemed to be only a small quantity of blood in the pelvis, and hoping this would be absorbed, I agreed to curette the patient after two days. The next morning she was taken with violent pains in the right side; pulse very

* Reported, with specimen, to the Medical Society October 10, 1906.

rapid (140); no rise in temperature. She was admitted to the Columbia Hospital and the abdomen opened the same afternoon. A pint and a half of blood was found, most of it of a dark color. The right tube, about the size of a man's thumb, was filled with dark blood-clot. The pain during the last attack was probably due to the effort on the part of the tube to expel this clot. The tube was removed. No fetus was found and no membrane that could be detected by the eye. Dr. James Carroll examined the specimen and pronounced it an ectopic pregnancy; the chorion villi were distinct.

The interest in this case is the shortness of time which elapsed between the time the menstruation was due and the rupture; the continuance of the symptoms during the month, and the same symptoms coming on again because of the blood-clot occupying the tube.

The specimen consisted of the fallopian tube longitudinally bisected through the opening of rupture, and showing the place of attachment of the ovum; this, however, had probably escaped. The period of pregnancy could not have been more than a week or so.

TWO CASES OF CALCULOUS PYONEPHROSIS WITH NEPHRECTOMY.*

By F. R. HAGNER, M. D., and STERLING RUFFIN, M. D.,

Washington, D. C.

Dr. Hagner's Case.—R. S. G., a business man, age 39, was first seen May 24, 1906; referred by Dr. Richardson. Family history negative. Patient had gonnorrhoea ten years ago, lasting two months, and without complications. No syphilis. Was treated for pulmonary and laryngeal tuberculosis by Dr. Richardson; recovered completely after treatment in the Adirondacks and in North Carolina. When 17 years old he was refused life insurance on account of pus in the urine. For 15 years he has had frequency of urination both day and night, rising two or three times during sleeping hours. There has always been more or less irritation

*Reported, with specimens, to the Medical Society, October 24, 1906.

referred to the neck of the bladder and glans penis during urination. At times this amounted to terrible burning, causing much inconvenience. If the pain came on during the day there was some relief on lying down.

He never had any pain in the back or symptoms of renal colic. The stream was never suddenly cut off and he never passed any calculi. The urine for 22 years has been cloudy, clearing up to a certain extent at times, but never perfectly clear; it has contained blood and he has passed clots. He has at times what he thinks is malaria. He was treated in Philadelphia for five years for cystitis, during which time he was twice cystoscoped and from what he says he was thought to have vesical tuberculosis. I also thought from his history and before examination that he had tuberculosis.

He was fairly well nourished. The testicles were normal; the prostate was small, regular, and the cleft was present; the seminal vesicles were not enlarged. The first urine passed was pussy and contained a number of heavy, irregular and thread-like shreds; the second urine passed was cloudy with numerous large scaly shreds. On allowing the urine to settle it contained between one-third and one-fourth pus by volume. He never had any symptoms referable to the kidney. On palpation the right kidney was found to be enlarged and was not movable.

Cystoscopic examination, June 1, 1906. Bladder capacity 300 cc. First washing was slightly cloudy and contained irregular shreds. After three washings the fluid came away clear. Cystoscopic examination revealed slight inflammation of the bladder mucosa, but nothing to account for the enormous quantity of pus present. No ulcers nor tuberculous deposits could be demonstrated. Left ureteral orifice was normal; right orifice greatly inflamed, as was also the trigone on that side. It was impossible to introduce the ureteral catheter into right ureter, on account of the swelling and irregularity of the right ureteral orifice.

From the left ureter the urine collected by catheterization contained a normal percentage of urea; it contained no pus nor blood. The catheter went up to the pelvis of the kidney without difficulty. On inspection there was seen to flow from the right ureter at intervals of 10 to 15 seconds wormy-like masses, which would curl up and break off. The diagnosis of tubercu-

losis was practically excluded as there was no sign of any tubercular infection of the bladder ; if tuberculosis had been present it would surely have shown in the bladder, as the patient had had pus in the urine for 22 years. The diagnosis of pyonephrosis and probably kidney stone was made. Examinations of catheterized specimens from the bladder showed pus and blood but no tubercle bacilli ; in fact, no organisms were demonstrated.

The x-ray picture was taken by Dr. W. H. Merrill. He reported that he did not believe stones were demonstrated in the skiagraph ; but a faint shadow can be made out in the light of subsequent findings.

The operation was done June 26. Under ether, an incision about 10 inches in length was made along the lower border of the 12th rib. The dissection was made behind the peritoneum and a very much enlarged kidney exposed. Great difficulty was experienced in removing the organ, during which the peritoneal cavity was twice opened and the abscess ruptured ; one of the peritoneal openings was sewed up and through the other was introduced a drainage tube.

The kidney was found to be extensively diseased, contained about a pint of pus, and before opening felt very much like a bean-bag, on account of the numerous small stones within.

The patient made a good recovery, but was much troubled by hiccoughs for a time ; these were probably due to reflex irritation from the drainage tube. After the operation, the urine on the 1st day was bloody, on the 2d day almost clear, and on the 3d day 52 ounces in quantity.

Dr. R. S. Blackburn examined the stones and found them to consist of amorphous urates and a small quantity of uric acid.

The interesting feature about this case is that a patient could have such a kidney condition without ever having any symptoms referable directly to the kidney. Of course such cases are not unheard of ; in fact, all writers on the subject speak of such cases, and the possibility of vesical irritation being of kidney origin should always be considered.

Dr. Ruffin's Case.—The man was seen by me four years ago, and at that time he had no symptoms referable to the kidneys ; a fact made significant by the recent developments of the case, however, was that eight years prior to his first examination, he had an attack of colic suggestive of calculus. The urine was

examined at this first consultation (with negative results) on account of frequent headaches; the other symptoms—lassitude, bodily fatigue on slight physical exertion, and mental fatigue on slight mental exertion—pointed to neurasthenia. He passed from under my care and went West, but recently, on account of persistent headache, and an acute illness characterized by lumbago, fever and sweats, he came East again. The symptoms which suggested kidney involvement were pyuria, lumbago, fever and sweats. Dr. H. A. Fowler catheterized the ureters: from the left ureter normal urine was obtained; nothing escaped from the right, the catheter becoming plugged. The x-ray picture showed a remarkably accurate shadow of the stone. Dr. W. P. Carr removed the right kidney, which was found to contain a large dendritic calculus and much foul pus; the odor of the pus suggested colon infection, but this point was not proven on account of the failure to obtain a specimen by ureteral catheterization.

The most interesting features about the case are that the patient surely had had renal calculus for twelve years, perhaps for a longer period, and that during this time his symptoms had been of the neurasthenic type—headache, easily induced mental and physical fatigue, none pointing to kidney disease. During the past four years he has been doing continuous hard work, with continued symptoms of neurasthenia. All the time he appeared to be in good health. The circumstance of pyuria, with septic symptoms, called attention to the kidney as the source of the trouble. Nephrectomy was performed because of the extensive destruction of the kidney.

Dr. Carr said that both cases were remarkably alike in that both had had no renal symptoms, although both had large collections of pus with stones in the kidneys. The explanation of the absence of symptoms lies in the large size of the stones. If they had been smaller there would have been an attempt at expulsion with the production of colic. There is ordinarily no pain in kidney disease unless there is an effort to expel some solid mass.

In Dr. Ruffin's case no specimen was obtained through the ureteral catheter because the stone so blocked the ureter that no urine nor pus could escape.

Dr. Carr remarked upon the remarkably clear definition of the outline of the stone and also the kidney in the x-ray negative. The stone, a single one of the antlered variety, filled every calyx except two which were distended with pus.

Dr. Hagner had spoken of the difficulty of avoiding tearing the peritoneum while removing the kidney in his case; this had been prevented by Dr. Carr by peeling the kidney out of its capsule. He put in a drainage tube, but to his surprise the wound healed without any discharge. Later a little fluid had to be evacuated, but it appeared to be broken-down fat.

It was evident that the kidney had not been secreting for some time; the post-operative history of the case proved that compensatory function had already been established in the other kidney, and that it was proper to remove the diseased one.

Dr. H. A. Fowler said that he had examined Dr. Ruffin's interesting case. Up to within a few weeks of the operation the urine had contained much pus. When the patient came to Dr. Fowler, however, the voided urine was clear in all three glasses. The cystoscopic examination was remarkable in several respects: there was not the slightest irritability of the sphincter upon introduction of the instrument, and upon inspection, a beautiful picture of a perfectly normal mucosa presented. The trigone was normal; no catarrh nor injection of the mucous surface anywhere. But from the right ureter a little ribbon of pus could be seen escaping, though no urine. The catheter was passed in the right ureter to the pelvis of the kidney, but no specimen was obtained, on account of immediate plugging of the catheter. The foul character of the pus found at the operation probably indicated colon infection; but in the small amount of pus obtained from the lumen of the ureteral catheter no organisms could be found. It would seem, therefore, that the pus was completely shut in the kidney by the stone and on that account could not descend to the bladder.

Dr. Hagner said that in his case everything was so matted together that there was no possibility of stripping the kidney out of its capsule.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, October 3, 1906.—Dr. Jas. Dudley Morgan, President, in the chair; about 65 members present.

The Board of Censors reported favorably upon the following applicants for active membership, and they were elected: Edwin H. Behrend, Georgetown University, 1894; Henry C. Coburn, Jr., George Washington University, 1903; Emma Lootz Erving, Johns Hopkins, 1902; W. Ashby Frankland, George Washington, 1896; Francis E. Harrington, George Washington, 1904; George H. Heitmuller, University of Pennsylvania, 1894; Arthur Le-

Roy Hunt, George Washington, 1905; Lawrence M. Hynson, George Washington, 1904; Chas. W. Hyde, George Washington, 1904; Adam Kemble, George Washington, 1905; Carlisle P. Knight, George Washington, 1904; Wm. Beverly Mason, Medical College of Virginia, 1899; S. Wickes Merritt, University of Virginia, 1901; John Donaldson Murray, College P. and S., N. Y., 1899; Charles L. Waters, George Washington, 1905; Walter Watkins Wilkinson, George Washington, 1905; Frederick Yates, George Washington, 1904.

The Chair announced the death of Dr. Parke G. Young and appointed Drs. Wm. T. Gill, Charles K. Koones and F. A. Roman a committee to draw up suitable resolutions of respect.

The Executive Committee was instructed to take into immediate and careful consideration the effect, if any, of the so-called Pure Food and Drug Act (Pub. No. 384) upon the practice of medicine in the District of Columbia.

A letter from Judge Wm. H. DeLacey, asking the co-operation of the medical profession in certain aspects of the work of the Juvenile Court of the District of Columbia, was referred to the Executive Committee.

Dr. Wm. C. Borden, U. S. Army, read the paper for the evening. Subject: "The Walter Reed Army General Hospital, Washington, D. C." Discussed by Drs. Wm. A. White, Kober, Cook, Gen. Forwood, U. S. A., and Dr. D. S. Lamb. See p. 231.

Wednesday, October 10.—Dr. Morgan, President, in the chair; about 55 members present.

Surgeon Braisted, U. S. Navy, was introduced and extended an invitation to members of the Society to inspect the new Naval Hospital, upon the day of its opening, October 13.

Dr. J. T. Kelley reported a case of Splenectomy, and one of Ectopic pregnancy. The specimen was presented in each case. Discussed by Drs. Acker and Randolph.

Dr. Barnes read the essay for the evening. Subject: "The Hospital, the proper place for the Treatment of the Puerpera." Discussed by Drs. Acker, D. Olin Leech, Reyburn, Isabel H. Lamb, Kelley and A. F. A. King. See p. 248.

Special Meeting, October 12.—Dr. Morgan, President, in the chair. A large audience.

Sir Almroth E. Wright, of London, delivered an address. Subject: "Principles of the Treatment of Bacterial Diseases by the Inoculation of the corresponding Vaccines." A rising vote of thanks was given the speaker.

Wednesday, October 17.—Dr. Morgan, President, in the chair; about 45 members present.

The resignation of Dr. Rosalie Slaughter (now Slaughter-Morton) was accepted.

Dr. Cook reported for the Committee on the Reed Memorial.

Dr. Medford reported a case of *Fetus papyraceus* with specimen. It was a twin fetus with separated placenta, discharged along with the other twin, which was at full term and normal; first pregnancy. The flattened fetus appeared to be about three months old.

Dr. D. S. Lamb reported a case of *Chronic valvular disease of the heart*, with specimens.

The specimens in this case consisted of the heart, showing some hypertrophy and dilatation due to the mitral insufficiency; in other words, compensatory. The mitral valve was markedly stenosed, the opening admitting only one finger; there was calcareous induration. On the auricular side of the valve were vegetations. Also a portion of the right lung, showing a large hemorrhagic infarction with fibrin deposit on the pleural surface. The left lung was normal. Also the right kidney, bisected to show the internal structure; here again were large infarctions, but they were quite pale. The left kidney was normal. These infarctions were due to emboli from the heart. The brain, which was not preserved, was anemic, and in the left hemisphere, mainly above the basal ganglia, showed cribriform softening due to the presence of a white embolic thrombus in the left middle cerebral artery. This embolus also came from the heart.

The subject in this case was a woman, probably 45 to 50 years old, who died last Spring. Drs. Edwin Behrend and Lamb made the post mortem examination. The history had not been received. The other lesions besides those named were of minor interest; the examination, made about three hours after death, showed the scalp congested, slight adhesion of dura anteriorly to the calvarium, cerebro-spinal fluid abundant, some fluid in right pleura, some gritty concretion in the gallbladder, spleen small, capsule thickened.

The sequence of events in this case seemed to be clear; the mitral stenosis and vegetations were the primary lesion; the several embolic thrombi were secondary. Death would seem to have been due to the sudden interference with the action of the kidneys, helped, of course, by the interference with the functions of the brain and lung.

The appearances of the hemorrhage in the right lung were exactly those of a recent infarction. It was difficult, however, to explain such a condition in the absence of disease of the right side of the heart or suspicion of thrombi in the systemic veins. Of course pulmonary hemorrhages are favored by mitral stenosis and by cerebral lesions that disturb the respiration; but the cerebral lesion in this case could hardly be said to occupy any such disturbing location.

Dr. Polkinhorn read the paper for the evening. Subject: "Review in Ophthalmology." Discussed by Drs. Belt, Butler, O. Wilkinson, Kober, S. B. Muncaster, and Jas. Stuart. See page 256.

Wednesday, October 24.—Dr. Morgan, President, in the chair; about 70 members present.

The report of the Committee to prepare resolutions on the death of Dr. Parke G. Young was read and adopted.

WHEREAS the Medical Society of the District of Columbia has learned with deep sorrow of the death of Parke G. Young, for many years a distinguished member of the Society and of the medical profession of Washington,

AND WHEREAS his lovable qualities endeared him to his many friends and his scholarly attainments made him a companion always to be remembered; be it therefore

Resolved, that the Medical Society of the District of Columbia joins with the family of its deceased member in mourning his loss, and expresses its profound sympathy to his bereaved family in their great affliction; and be it further resolved that these resolutions be spread upon the minutes of the Society.

(Signed) WM. T. GILL,
CHAS. K. KOONES,
F. O. ROMAN.

Dr. Hasbrouck reported a case of Interscapulothoracic Amputation for Sarcoma of the Arm, with specimen. Discussed by Drs. Balloch and Jas. F. Mitchell. See p. 287.

Drs. Hagner and Sterling Ruffin each reported a case of Calculous Pyonephrosis, with specimen. Discussed jointly by Drs. Carr and H. A. Fowler. See p. 294.

Dr. Claytor read the paper for the evening. Subject: "A Brief Study of Mitral Stenosis." Discussed by Drs. Fremont-Smith, J. D. Thomas, S. S. Adams, Carr, D. S. Lamb and E. B. Behrend. See p. 278.

PERFORATION IN TYPHOID FEVER.—It is desired to learn how many cases of perforation in typhoid fever in this District have been operated on and with what success. Members are requested to report to Dr. D. S. Lamb the number of such cases that have occurred in their practice, stating whether they recovered or not.

NOTES ON NEW AND UNOFFICIAL REMEDIES.

Under this head we shall, from time to time, publish in brief a list of the articles tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Fuller information as to synonymy, composition, chemical relations, character and manufacture may be found either in the *Journal of The American Medical Association* or in the forthcoming annual, "New and Non-Official Remedies."

It is to be understood that the acceptance of an article by the Council does not necessarily mean a recommendation, but that, so far as is known, it complies with the rules adopted by the Council; chief among these are that the articles are non-secret, they are not advertised to the public, and they are believed to be what they are claimed to be. The following notes are, by permission, abstracted from the *Journal of The American Medical Association*. The limited space which we can devote to the subject precludes the use here of the many qualifying statements which may there be found. It must be distinctly understood that the Editorial Committee assumes no responsibility whatsoever for any of the following statements, our purpose being solely to awaken a wider interest in and stimulate further study of these products.

Acetozone.—An organic peroxide from which oxygen is given off slowly in a nascent condition. Ophthalmic, aural, nasal and intestinal antiseptic. In aqueous solution, 1 Gm. to 1000 Cc. (15 grains to the quart).

Acetozone Inhalant.—An oily preparation for use in atomizer or nebulizer.

Acet-Theocinsodium.—Diuretic. 0.2 to 0.35 Gm. (3 to 5 grains) p. c.

Adnephrin Emollient.—Locally where long use is required. (1-1000).

Adnephrin Oil Spray.—In congestive and inflammatory conditions of the mucous membranes, preferably after cleansing with Dobell.

Adnephrin Solution.—1-1000 in physiologic salt solution containing 0.5 per cent. chlorbutanol. See Suprarenal Alkaloid. Internally 0.2 to 2.0 Cc. in water (3 to 10 minims).

Adrenalin.—Locally, 1-1000 to 1-15000 solution as chloride. Internally, 0.3 to 2 Cc. (5 to 30 minims) of 1-1000 solution. Hypodermically, 1 to 15 drops of 1-1000 solution diluted with sterile water.

Adrenalin Chloride Solution.—1-1000 in physiologic salt solution preserved with 0.5 per cent. chlorbutanol.

Adrenalin Suppositories.—1-1000 Ol. Theobromae. Weigh about 1 Gm.

Agurin.—Diuretic. 0.5 to 1 Gm. (7 to 15 grains).

Airol.—Liberates iodine in the nascent state in presence of wound secretions. Pure, diluted with talc, 10 per cent. suspension, 10 to 20 per cent. ointment.

Alpha-Eucaine Hydrochloride.—Local anaesthetic, vaso-dilator, non-mydriatic, moderately bactericidal; more irritating than cocaine or than beta-eucaine. 2 to 5 or even 9 per cent. solutions. Not more than 2 Cc. (30 minims) of a 4 per cent. solution at one time.

Alphozone.—An organic peroxide, germicidal and antiseptic. Tablets containing 0.065 Gm. (1 grain) one to 60 Cc. (2 fluidounces) of water=1-1000 for external use. Nasal douche, one to 180 Cc. (6 fluidounces).

Alumnol.—Astringent and mild antiseptic. In surgery, 0.5 to 3 per cent. solutions; gynaecology, 2 to 5 per cent.; otology and laryngology as powder or 0.25 to 1 per cent. douche, wash or gargle; cautery 10 to 20 per cent.

Aminoform.—Name applied to Hexamethylenamina, U. S. P.

Anesthesin.—Purely local anaesthetic, non-penetrative, insoluble. Internally, 0.3 to 0.5 Gm. (5 to 8 grains), in pastilles. Externally as powder, pure or diluted. Ointments and suppositories.

Antipyrine Salicylate.—Analgesic and antirheumatic. 0.3 to 2 0 Gm. (5 to 30 grains).

Antithermoline.—Closely resembles Cataplasma Kaolini, U. S. P.

Antithyroid Preparations.—Obtained from blood or milk of thyroidectomized animals. Action merely palliative. Orally and hypodermically, former preferred. Non-toxic even in large dose.

Antithyroidin, Moebius.—0.5 to 1 Cc. (8 to 15 minims) t. i. d. gradually increased.

Argentamin.—Corresponding to 10 per cent. silver nitrate. An-

tiseptic and astringent. Anterior urethra, 0.25 to 1 per cent. solutions; posterior, 1 to 4 per cent.; ophthalmology, 5 per cent.

Argonin.—Contains 4.28 per cent. silver. Claimed to have greater permeating power than other silver albumoses. Generally, 0.5 per cent. solution, but up to 20 per cent.

Argyrol.—Contains 20 to 25 per cent. silver. Non-irritating, non-toxic antiseptic. 10 to 25 per cent. and even stronger solutions.

Aristochin.—Action, uses and dosage, same as those of quinine.

Aristol.—Name applied to Thymolis Iodidum, U. S. P.

Aspirin.—Acts like salicylic acid but with less of the undesired local and systemic effects. Decomposed in intestine. 0.3 to 1 Gm. (5 to 15 grains).

Benzosol.—Decomposed in intestine into guiacol and benzoic acid. In incipient pulmonary tuberculosis and as an intestinal and urinary antiseptic. 0.2 to 0.6 Gm. (3 to 10 grains).

Beta-Eucaine Hydrochloride.—Local anaesthetic, non-stimulating, non-mydriatic, non-vasoconstrictor. Stable. Eye, 2 to 3 per cent. solutions; nasolarynx, 5 to 10 per cent.; haemorrhoids, 5 to 10 per cent. ointment.

Beta-Naphthol Benzoate.—Split up in intestinal tract. Antiseptic, diuretic (?). Externally, 3 to 10 per cent. ointment, parasiticide. 0.2 to 0.5 Gm. (3 to 8 grains). Maximum single 1 Gm. (15 grains), daily 4 Gm. (60 grains).

Betol—Split up in intestine. Intestinal and urinary antiseptic. 0.3 to 0.5 Gm. (4 to 8 grains).

Bismal.—Astringent; chronic diarrhoea. 0.12 to 0.3 Gm. (2 to 5 grains).

Borochloretone.—Antiseptic and anaesthetic. Surgical dressing powder.

Brometone.—Claimed to have the sedative action of bromides without disadvantage of producing bromism. 0.3 Gm. (5 grains) repeated two or three times in 24 hours.

Bromipin.—10 per cent. brominized sesame oil. Split up in intestines and, after absorption, in tissues. 4 Cc. (1 fluidrachm) increased in epilepsy to 8 to 32 Cc. (2 to 8 fluidrachms).

Bromipin.—33⅓ per cent.

Butyl-Chloral Hydrate.—Similar to chloral, said to be less dedepressing and more analgetic. 0.3 to 1.3 Gm. (5 to 20 grains).

Calcium Ichthyol.—A derivative of ichthyol in which calcium is substituted for ammonium.

Calomelol.—Soluble colloidal calomel, 80 per cent. mercurous chloride, 20 per cent. proteid. Internally, as calomel; externally, dusting powder, with starch or starch and zinc oxide, or as

Calomelol Ointment.—45 per cent. in lard. 6 Gm. (90 grains) daily in syphilis.

Cascara Evacuant.—Bitterless cascara. Laxative, 0.6 to 1 Cc. (10 to 15 minims) t.i.d.; purgative, 1.3 to 2 Cc. (20 to 30 minims) morning and evening. 4 Cc. (1 fluidrachm) in obstinate cases.

Cascara Tonic Laxative Globules.—1 to 2 before retiring.

Chinaphenin.—Antiperiodic, analgesic, tasteless, does not produce cinchonism. Adult, 0.3 to 0.6 Gm. (5 to 10 grains) ordinarily or 1.5 to 2 Gm. (22 to 30 grains) in neuralgia and malaria; in pertussis, 0.13 to 0.3 Gm. (2 to 5 grains) according to age.

Chlorbutanol.—Local anaesthetic, antiseptic; preservative for hypodermic solutions. 0.3 to 1.5 Gm. (5 to 20 grains) dry or in capsules. Hypodermically, saturated aqueous solution.

Chloretone.—Name applied to chlorbutanol.

Chloretone Inhalant.—Anodyne, antiseptic and emollient; spray or nebula.

Citarin.—Uric acid eliminant. 1 to 2 Gm. (15 to 30 grains) largely diluted with water.

Creosotal.—Non-toxic, non-irritant. Adult, 1 to 4 Gm. (15 to 60 grains); children, 0.3 to 2.0 Gm. (5 to 30 grains). Externally may be applied undiluted.

Dentalone.—Anaesthetic, in treatment of exposed nerves in decayed teeth.

Dermatol.—Name applied to Bismuthi Subgallas, U. S. P.

Diabetin.—Laevulose. In diabetes, daily, 30 to 60 Gm. (1 to 2 ounces) in grave forms 12 to 24 Gm. (3 to 6 drachms) daily.

Dionin.—Like morphine but without producing constipation, nausea or lassitude. 0.015 to 0.06 Gm. (¼ to 1 grain); externally in 10 to 20 per cent. solutions.

Diuretin.—Name applied to Theobromine-sodium salicylate.

Duotal.—Name applied to Guiacolis Carbonas, U. S. P.

Duotonol.—See glycerophosphates.

Elixir Eupnein.—Compound elixir of heroin, creosote and terpin hydrate. 4 to 12 Cc. (1 to 3 fluidrachms).

Elixir Saw Palmetto.—Elixir Sabali, Santali et Zeae Maidis. 4 to 16 Cc. (1 to 4 fluidrachms) t.i.d.

Empyroform.—Condensation product of birch tar and formaldehyde. Antipruritic, sedative and dessicant. 5 to 10 per cent. ointment, 10 to 20 per cent. zinc paste, 10 to 20 per cent. tincture, 37.5 per cent. suspension.

Epicarin.—Non-poisonous antiseptic and parasiticide. 5 to 20 per cent. ointment or 10 per cent. oily or alcoholic solution.

Erythrol Tetranitrate.—Vasodilator and antispasmodic like nitroglycerine; action begins in 15 minutes, persists 3 to 4 hours. Tablets, each 0.03 Gm. (½ grain); one or two every 4 to 6 hours.

Ethylenediamine.—See Kresamine.

Eucaine.—See alpha-eucaine hydrochloride and beta-eucaine hychloride.

Eucaloids.—Gelatine capsules each containing 0.3 Cc. (5 minims) of pure oil of eucalyptus. 1 to 2 globules 3 or 4 times daily.

Eucamul.—Emulsion of oil of eucalyptus in glycerin and honey, containing 0.13 Cc. (2 minims) of the oil in 4 Cc. (1 fluidrachm). 2 to 4 Cc. (½ to 1 fluidrachm) p. r. n.

Eugallol.—An energetic substitute for pyrogallol. In old and persistent psoriasis. Applied pure by pencilling once a day, and covering the painted part with zinc oxide.

Eumydrin.—Mydriatic and antihydrotic. On pupil, action intermediate between atropine and homatropine. Internally 0.001 to 0.0025 Gm. (1-60 to 1-24 grain). Externally, in solutions, one-tenth stronger than the usual atropine solutions.

Euphorin.—Anodyne, antipyretic and antiseptic. 0.5 to 1 Gm. (8 to 15 grains); externally, in powder, in lanolin ointment and in superfatted soap.

Euphthalmin.—Mydriatic, substitute for atropine, homatropine, etc. 2 to 3 drops of a 5 or 10 per cent. solution p. r. n.

Euquinine.—Use and dose same as quinine. Tasteless.

Euresol.—Similar to resorcinol, milder and more lasting. 5 to 20 per cent. ointments and in acetone solution.

Euresol Soap.—Chilblain soap.

Europhen.—Similar to iodoform and thymol iodine. Pills 0.2 to 0.3 Gm. (3 to 5 grains). Dusting powder, with or without boric acid; lanolin ointment; or 5 per cent. embrocation in olive oil.

Ferrichthyol.—Contains about 2.5 per cent. iron. Alterative, antiseptic, haematinic and tonic. 1 to 2 Gm. (15 to 30 grains) in tablets.

Ferripyrine.—Identical with

Ferropyrine.—Haematinic, haemostatic, astringent, analgesic and tonic. 0.3 to 1 Gm. (5 to 15 grains). Externally 1 to 1.5 per cent. solution as injection, to 20 per cent. solution or pure for hemorrhages.

Formalin.—Name applied to Liquor Formaldehydi, U. S. P.

Formin.—Name applied to Hexamethylenamina, U. S. P.

Gallogen.—Astringent and antidiarrhoeic; decomposed slowly in intestine 0.3 to 0.5 Gm. (5 to 8 grains) for children; 0.6 to 1 Gm. (10 to 15 grains) for adults.

Germicidal Soap.—Disinfectant; does not coagulate albumen nor corrode steel or nickel. Applied externally dissolved in water. A mild form contains 1 per cent. mercuric iodide, also a soft soap, ditto.

Glutol-Schleich.—Becomes antiseptic and bactericidal in contact with living cells. Employed undiluted as dusting powder.

Glycerin Emollient.—Gynaecologic and surgical lubricant.

Glycerophosphates.—Potassium and sodium salts, hypodermically 0.2 to 0.25 Gm. (3 to 4 grains) in physiologic salt solution; *per os* 0.25 to 0.65 Gm. (4 to 10 grains). Calcium, iron, lithium, magnesium and manganese salts 0.2 to 0.65 Gm. (3 to 10 grains) tablets. Quinine salt 0.1 to 0.33 Gm. (1.5 to 5 grains); strychnine salt, 0.001 to 0.003 Gm. (1-60 to 1-20 grains).

Guaiacol-Salol.—Antiseptic and antirheumatic. 1 Gm. (15 grains).

Guaiamar.—Substitute for guaiacol. 0.3 to 1.3 Gm. (5 to 20 grains).

Guajasanol.—Antiseptic and anaesthetic. 1 to 3 Gm. (15 to 45 grains). Locally, 0.1 to 2 per cent. solution.

Hedonal.—Hypnotic. 1 to 2 Gm. (15 to 30 grains).

Helmitol.—Name applied to Hexamethylenamine Methylencitrate, q.v.

Hemicranin.—Acetphenetidin 5, caffeine 1, citric or tartaric acid 1. 0.5 to 1 Gm. (8 to 15 grains).

Hemogallol.—Haematinic. 0.25 to 0.5 Gm. (4 to 8 grains). a.c.

Hemoquinine.—Compound elixir of the so-called peptonate of iron, manganese and quinine with arsenic. 8 Cc. (2 fluidrachms) t.i.d.

Heroin.—Diacetyl-morphine.

Heroin Hydrochloride.—0.0025 to 0.005 Gm. (1-24 to 1-12 grain) 3 to 4 times daily; maximum 0.01 Gm ($\frac{1}{6}$ grain). To children 0.0002 to 0.001 Gm. (1-300 to 1-60 grain). Hypodermically in 2 per cent. solution. *N. B.*—Habit readily formed; on withdrawal, tendency to dangerous respiratory failure.

Heromal.—Heroin and hypophosphites in malt extract. 8 Cc. (2 fluidrachms) every 3 or 4 hours; = heroin 0.0013 Gm. (1-48 grain), sodium hypophosphite 0.03 Gm. ($\frac{1}{2}$ grain) in malt extract with 6 per cent. alcohol.

Heroterpine.—Elixir of heroin and terpin hydrate. 8 Cc. (2 fluidrachms) = Terpin hydrate 0.13 Gm. (2 grains), heroin 0.0026 Gm. (1-24 grain) in menstruum containing 32 per cent. alcohol with glycerin and aromatics.

Hetol.—Name applied to synthetic sodium cinnamate.

Hexamethylenamine Methylencitrate.—Urinary antiseptic and germicide. 0.6 to 1 Gm. (10 to 15 grains).

Holocaine Hydrochloride.—Anaesthetic and antiseptic. 1 per cent. solution.

Hypnal.—Analgesic and hypnotic. 1 to 2 Gm. (15 to 30 grains).

Ichthalbin.—Antiseptic and antiphlogistic. Infants, 0.13 to 0.3 Gm. (2 to 5 grains); older children 0.6 to 1 Gm. (10 to 15 grains); adults, 1 to 1.3 Gm. (15 to 20 grains).

Ichthammon.—Similar to Ichthyol.

Ichthargan.—Contains about 30 per cent. metallic silver and 15 per cent. sulphur. Bactericide, astringent, antiphlogistic. 0.04 to 0.2 per cent. solution in gonorrhoea; 3 per cent. in posterior urethritis; 0.5 to 3 per cent. in trachoma.

Ichthermol.—Contains 24 per cent. metallic mercury.

Ichthoform.—Antiseptic and antiphlogistic. Internally, 0.6 to 2 Gm. (10 to 30 grains); externally, pure powder, 30 to 50 per cent. triturations or 10 to 25 per cent. ointment.

Ichthyol.—Antiseptic, alterative. Internally, 0.2 to 2 Cc. (3 to 30 minims); externally, 0.06 to 0.12 Cc. (1 to 3 minims) bougies, or 1 to 3 per cent. solution.

Ichthyolum Austriacum.—Like Ichthyol.

Iodipin.—Iodine addition product of sesame oil, containing 10 per cent. iodine. More lasting than iodides and less iodism.

[M. G. M.]

(*To be continued.*)

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
WALTER A. WELLS, M. D., ... "The Rochambeau."
MURRAY GALT MOTTER, A. M., M. D., . . . 1841 Summit Place.

Editorial.

PHOTOGRAPHS OF MEMBERS.—The object of making a collection of photographs of members of this Society is, if practicable, to reproduce them in groups in the projected History of the Society. The groups would be arranged as far as possible in the order of election to membership. Should the proposition to reproduce them fail, from any cause, then it is planned to arrange the photographs in an album.

In addition to the list of photographs published in the last number, the following have been received by the Committee on History, a total thus far of 145 photographs in a membership of over 800.

Abbe, Truman
Acker, G. N.
Adams, A. C.
Adams, S. S.
Ball, C. A.
Bond, S. S.
Borrows, Joseph
Buck, A. M.
Copeland, E. C.
Corey, G. B.
Donohue, Florence
Garnett, A. Y. P.
Gleeson, J. K. P.
Godding, W. W.
Grasty, T. S. D.
Griffith, Monte
Hall, A. J.
Heitmuller, G. H.
Holden, R. T.
Holmes, Mary
Hynson, L. W.
Jackson, V. B.
Kober, G. M.
Mason, W. B.
Mitchell, J. E.
Mulcahy, D. D.
Patterson, D. C.
Peter, Armistead
Polkinhorn, H. A.
Prentiss, D. W.
Prentiss, Jr., D. W.
Ramsburgh, Jesse
Robins, W. L.
Ruffin, G. M.
Ruffin, Sterling
St. Clair, F. A.
Staples, A. H.
Taylor, Thomas
Thompson, H. P. P.
Worthington, Chas.

In this number of the Annals appear notices of a few of the many charitable institutions of this city, of which but little is generally known, and which have more or less of a medical side. It is hoped that these notices will increase the interest in these institutions.

The following is a list of the living members of the Society who were elected before 1870:

1. Warwick Evans, February 1, 1864.
2. Joseph T. Howard, March 7, 1864.
3. Thomas C. Smith, July 4, 1864.
4. J. Ford Thompson, July 4, 1864.
5. A. F. A. King, July 4, 1864.
6. S. W. Bogan, July 4, 1864.
7. Ralph Walsh, October 3, 1864.
8. J. W. Bulkley, December 12, 1864.
9. H. A. Robbins, November 22, 1865.
10. A. Behrend, August 1, 1866.
11. Robt. Reyburn, January 16, 1867.
12. O. M. Muncaster, February 27, 1867.
13. J. Taber Johnson, May 1, 1867.
14. D. S. Lamb, September 25, 1867.
15. V. McNally, November 13, 1867.
16. C. V. N. Callan, March 25, 1868.

Arranged in order of age, these names are as follows:

Bulkley, born in 1824; Evans, 1828; Howard, 1832; Reyburn, 1833; Thompson, 1837; Robbins and McNally, 1839; Muncaster and Bogan, 1840; King, Behrend and Walsh, 1841; Smith, 1842; Lamb, 1843; Callan, 1844; Johnson, 1845.

Thomas Taylor is the oldest member, having been born April, 22, 1820; he was not elected a member, however, until 1884.

Notice.—At a meeting of the American Surgical Trade Association in Philadelphia, in June, 1906, it was resolved that after January 1, 1907, the trade would adopt the French scale for all catheters, bougies and sounds. A committee was appointed for the purpose of getting up a proper and accurate French scale card.

Every physician will see the importance of this step, as all are

acquainted with the annoyance of having catheters, bougies and sounds, and other instruments marked in American, English or French numbers. Physicians are requested from the above date to use only the French scale in ordering such goods, and when no scale is specified, orders will be filled by the French scale.

THE INDEX MEDICUS.—The Carnegie institution has been bearing the expense of the publication of the new series of the *Index Medicus*. The subscription price is $5.00 a year. A sample copy will be sent to any one writing to "The Carnegie Institution," Washington. The publication is a monthly. The volume for 1905 contains 1,241 pages and the index to the volume, 208 pages. The *Index Medicus* is invaluable and indispensable to any extended research in medicine or the collateral sciences. The publication of the first series was discontinued for want of support by the medical profession, and it is feared that, unless the present one is better supported than it is, the journal may again be discontinued.

THE MEMORIAL TO DR. WALTER REED.—Drs. Cook, Hickling and Reisinger are a committee of the Medical Society having in charge the collection of subscriptions to the Reed Memorial. The committee is anxious that members of the Society who are disposed to contribute and have not already done so should do so at an early date. Dr. Reed was personally known to most of the members and known by reputation to the new members. The proposed memorial is due to Dr. Reed, and the members of the Society who enjoyed his acquaintanceship would do well to take advantage of the opportunity to add to the memorial fund. The trustees of the fund desire to finish their work as soon as possible.

DR. J. FORD THOMPSON.—Dr. Thompson, who recently went abroad, has been seriously ill in London, in fact has undergone a serious operation, the ultimate result of which is in doubt. The Medical Society has sent to him a cablegram of sympathy and hope for his recovery. Dr. Thompson graduated in 1857 at the University of Maryland, and is therefore approaching the end of the fiftieth year of his professional life. He became a

member of the Medical Society in 1864, forty-two years ago. The extent of his operative work during these many years has been simply enormous. We all have a tender place in our hearts toward him.

A Suicidal Policy.—If one-half the rumors that we have heard during the past few years in regard to the sending of patients to Baltimore hospitals for treatment and operation are true, it will not require an expert mathematician to calculate the extent of damage that the local profession has annually suffered from this suicidal policy.

This question has an added importance when we take into account the number of consultants called here from that city every year, as well as surgeons to perform operations that our annual hospital reports show are being constantly performed in our own modern operating rooms with equal success and with much less expense and anxiety to our citizens.

It is probably within the bounds of truth to say that many thousand dollars are thus annually diverted from the incomes of the local profession and, so far as results are concerned, not only with little or no advantage to the patients, but their expenses have been greatly increased.

Families in political and social life are often advised to go to our neighboring city for medical or surgical treatment; their friends and neighbors become aware of this circumstance and naturally draw conclusions that are very likely to be unfavorable to the skill and ability of the local profession. Not unfrequently the fact of the departure is heralded in the newspapers, thus drawing more public and emphatic attention to the preference for outside and want of confidence in home talent.

This question is rapidly passing beyond the realm of theory and presents an actual condition which demands very serious consideration before the current becomes so strong that something more will be required than "dams" to arrest it. When the subject is discussed in the clubs and drawing rooms we frequently hear that if the doctors themselves are constantly taking or sending their patients out of the city for treatment the doctors must be the best judges of what is best for the patients, leaving very little ground to stand on for those who believe in home talent and would sustain it.

It has not unfrequently happened that families, which heretofore have had unshaken confidence in their local medical advisers, when some unusually serious question for medical decision and practice has arisen, have, on their own volition or the advice of some lay friend, gone directly to the same city and hospital to which friends or acquaintances have been taken or been sent by their physicians.

These matters are important, if true, and constitute a policy which will amount to professional local suicide if continued. If gentlemen think that they are doing the best that can be done for their patients by thus taking or sending them for treatment, these gentlemen are, of course, acting according to the dictates of their best judgment, and are open to criticism only on the ground of lack of enlightened judgment. The object of this note of warning is not only to draw attention to this mistaken policy and to its growing and powerful effects on our local interests, but to demonstrate that the continuation of such policy is absolutely unnecessary, and in some instances actually detrimental, to the best interests of the patients themselves, financially as well as physically.

It would consume too much time and space, and perhaps make invidious comparisons, which are always odious, to insert here extracts from recent annual reports of our hospitals, to sustain our contention. Attention is therefore simply invited to these reports, which are annually mailed to all the physicians in this city. The most casual consideration of their tables shows over and over again that major operations are being constantly performed by our own surgeons with a success that challenges comparison with that of other similar reports throughout the country. Thus in one of our hospital reports for 1905 we find 22 appendectomies without a death; and 5 additional cases of suppurative appendicitis operations with but 2 deaths; 35 appendectomies in another hospital the same year with only one death. In still another hospital, in the report for 1904 were 55 appendectomies, the result however not stated; and in still another hospital 83 similar operations with only one death.

The statistics in regard to other major operations in our hospitals are very favorable and are accessible to any inquirer after truth. For example, hysterectomy was done in one hospital 23 times with no death; in another hospital the same year the

ovaries and tubes were operated on for the relief of dangerous conditions 88 times with but 3 deaths. These patients could not probably have had better results in Baltimore or any other city.

Operations on such special organs as the eye, ear, throat, stomach, liver, gallbladder or other abdominal or on the pelvic organs; for fracture or dislocation; amputations; for shot or stab wounds of the abdomen; these have all been repeatedly and successfully performed by our own surgeons in our own hospitals; our hospital reports show results not surpassed by the other institutions to which so many of our people are annually sent.

Five recoveries from operations on account of typhoid-fever perforations were reported at a recent meeting of our Medical Society. It is very certain that these five patients would have died but for the good and timely surgery which literally snatched them from the grave. The same may be said concerning operations for perforative appendicitis; and especially is this true of shot and stab wounds of abdominal organs with escape of intestinal contents into the peritoneal cavity. One patient recovered after as many as 13 intestinal perforations were sutured and another recovered from as many intestinal perforations complicated with perforation of the liver and stomach, operated on by our own surgeons.

Enough has been said perhaps to sustain the statement above made that it is an unnecessary as well as suicidal policy to continue to send patients away for surgical treatment or so frequently to bring distinguished surgeons from a distance to operate here. Let them come in consultation, if patients or their friends desire, but do not let us invite them to take the operations and the emoluments from our own home talent. Doubting Thomases are referred to the annual reports of our local hospitals for confirmation of the above statements and inferences.

J. Taber Johnson.

Dr. D. H. Hazen, a member of this Society, died November 6, and Dr. John Walter, November 17. Fuller notices will appear later.

Medical Miscellany.

Proceedings of the Society of Ophthalmologists and Otologists of Washington, D. C. *October 19, 1906.*—Dr. J. J. Richardson reported a case of *gangrene of the mouth and fauces* in a man age 30, who was convalescing from a severe double pneumonia. There was profuse arterial hemorrhage from the mouth with subnormal temperature and great prostration; face swollen and indurated, the left eye being completely closed. The entire surface of the lips and cheek, a quarter of the tongue, the tonsils, much of the soft palate, and the uvula, were black, ragged and had a worm-eaten appearance. The nostrils posteriorly were obstructed. The gums were not involved. Odor of breath very offensive. An artery in the left cheek was bleeding; the bleeding was arrested with the hemostat. Three large masses of dead tissue, including the entire free margin of the tongue, part of the tonsils and the uvula, were removed and the mouth thoroughly irrigated with an antiseptic. The patient died five hours afterward, from exhaustion and sepsis, four days from the beginning of the disease. The question of diagnosis lay between *noma* and simply gangrene from pneumonia. Dr. Richardson was not inclined to consider it noma because of the rarity of that disease in adults; not over two per cent. Unfortunately no autopsy was made and no bacteriological examination. Of 23 cases of gangrene of the mouth, which were all that were found in the Index Catalog Surgeon General's Office Library, 19 ended fatally, 3 recovered, and the termination of one was not stated. In 8 cases the tonsils were involved and two recovered.

Dr. J. H. Bryan reported a case of *acute mastoiditis* in a child; there was bulging and fluctuation behind the ear. He did a full mastoiditis, exposing the dura and packing with iodoform; chloroform anesthesia. No urine was passed, and the child died the night after the operation.

Dr. O. A. H. McKimmie reported a case of *suppurative otitis media following grippe.* After treatment for four weeks by the family physician the case was seen by Dr. M. There was no pain, tenderness nor rise of temperature, but he advised an operation, which at first was declined but was done two weeks later, when pus was found in the attic and the lateral sinus was exposed.

Dr. Walter A. Wells reported a case of *chronic suppurative inflammation* of the left ear in a man age 23; the suppuration had lasted one month when Dr. W. saw the patient, September 30, 1906. The man was in hospital, supposed to have typhoid fever; a Widal test, however, was negative, but a test for the malarial germ was positive, and he was given quinine but did not get

better. The ear was then examined ; there was pain and tenderness, most severe at the angle of the jaw, and he had night chills. Dr. Wells advised an operation, which was declined, and a few days afterward the patient left the hospital. At his home, however, he had chills, fever and sweating until his death, October 15 ; had sometimes as many as five chills daily ; temperature ranged from subnormal to 103. The jugular swelling disappeared and then reappeared ; the discharge was offensive. He had also some pain over the heart. October 8 he had a profuse hemorrhage from the ear, of foul odor. He became delirious and died on the 15th. His mother and one brother had died of tuberculosis. Dr. Mitchell in discussing this case suggested that it might have been a good one for the use of antitoxin.

Dr. W. H. Wilmer read a paper on "The question of operation in simple glaucoma," which was discussed by Drs. Polkinhorn, Belt, Butler, Kimball, Mitchell and Lamb.

Dr. A. B. Bennett read a paper on "Glossitis, with report of a case," which was discussed by Drs. Bryan, McKimmie and Lamb.—R. S. Lamb.

Tuberculosis of the Kidney.—A Review of the Recent Literature.—During the past year reports have been made on the experiences in kidney surgery at several of the large clinics. Thus, Bevan reviews 60 cases which came to operation and in which the pathologic condition present was studied. Clairmont analyzes 77 cases from v. Eiselberg's clinic. In his paper at Lisbon, Kümmel reviews his experience with the newer diagnostic methods, and gives a summary of his results in 404 kidney operations of which 80 were for tuberculous disease. Lower has reported his results in 17 personal cases of renal tuberculosis. Kapsammer has given his experience with the phloridzin test in a series of over 200 cases. Legueu reviews the recent experimental researches on genito-urinary tuberculosis, and finds that they confirm the clinical findings ; and he shows the bearing of these on the treatment of this condition. The space allotted to us does not permit of an exhaustive review of these important reports. We can indicate only some of the salient points which they emphasize.

That tuberculosis of the kidney is much more common than is generally supposed and is one of the commonest diseases affecting this organ is abundantly confirmed by these latest reports. In Bevan's series of 60 cases, calculous disease heads the list with 28 cases, while tuberculosis stands second with 17 cases. In the larger series of Kümmel the proportion of these two diseases is about equal—81 cases of stone and 80 cases of tuberculosis. These statistics are in accord with those of earlier reports, and they emphasize the fact that tuberculosis, as compared with the other diseases of the kidney, is relatively common.

Another very important fact, which is supported by reliable statistics is, that in the majority of cases, the affection, at first, is unilateral. The percentage of cases in which the disease has been *shown* to be unilateral varies in the different series reported and ranges from 50 to 92 per cent. The majority of observers are agreed that if the cases are seen early, we should find about 90 per cent. of them unilateral. This fact together with the relative frequency of this condition and the very satisfactory results obtained by operation makes the early recognition and positive diagnosis of these cases of prime importance.

Symptomatology.—It would be of great value and assistance if this condition presented a characteristic group of clinical symptoms. But, unfortunately, this is not the case. Thus, while pain may be a prominent symptom in one case or group of cases, it may be entirely absent in others, or may be even misleading and referred to the healthy side. Hematuria of varying intensity is present in probably 25 per cent. of cases, but in his series of 17 cases, Lower states that this symptom was present in only one instance. The most common and significant symptom of renal tuberculosis, the one present in the large majority of cases, is frequency of urination, associated, usually, with tenesmus. This occurs both during the day and at night. Abundant, painless pyuria associated with vesical irritability is always suspicious, and should lead one to look carefully into the condition of the kidneys.

Diagnosis.—As pointed out by Bevan, there are a number of conditions in the kidney which present in common the following symptoms: (1) Blood and pus in the urine. (2) Pain in the kidney region and attacks of renal colic. (3) Tenderness in the kidney region. (4) Enlargement in the kidney region. (5) Bladder symptoms more or less marked. (6) Constitutional symptoms. (7) Slow onset and chronic course.

With the demonstration of the tubercle bacilli in the urine, the diagnosis of tuberculosis is positive in cases of renal disease. Kelly and others have pointed out that tubercle bacilli may pass through the kidney without producing any lesion of that organ, in a case of tuberculosis of the lung, for example, and thus their presence in the urine may lead to an error in diagnosis. But such cases must be rare, and can give rise to mistakes only when other means of examination are neglected.

Every patient in whom some pathological condition of the kidney is suspected, such as stone, tuberculosis or tumor, should be subjected to a careful, thorough, systematic examination. The following routine method is suggested as being applicable in the majority of cases and will enable one to determine the nature of the condition present. (1) A full, complete and satisfactory history. (2) An examination of the urine. (3) Complete physical examination. (4) Cystoscopy. (5) Ureter catheterization

and examination of the separate urines. (6) X-ray examination. (7) Cryoscopy of the blood.

The great value and importance of a complete history is insisted upon by all who have written upon this subject, but unfortunately this is rarely given the attention which its importance demands. Often, when the history of the case is inquired into carefully, one will obtain a history of some latent tuberculous affection, bone, lung, gland or joint.

The examination of the urine for pus, blood, albumen and infection, especially the tubercle bacilli, is of great importance. In the search for tubercle bacilli the urine should be examined daily for a week, and for longer periods even, when the x-ray examination for stone is negative and the patient's condition will allow. If the examination is negative, tuberculosis cannot be ruled out, since the organisms are found in only about fifty per cent. of the cases. They were found 11 times in Lower's 17 cases.

All observers are agreed as to the importance of the cystoscope in the diagnosis of renal tuberculosis. Oftentimes the diagnosis may be correctly made by observing the changes in the mucous membrane surrounding the ureteral opening on the affected side. When the process has extended to the lower end of the ureter and bladder, these changes are quite characteristic.

The value of the x-ray examination in detecting stone in the kidney depends altogether on the experience of the radiographer. Kümmel states that all kidney stones, of whatever composition, can and should be detected by this examination. Bevan says that if the x-ray examination is negative stone is excluded as a probable diagnosis in his work.

Ureteral catheterization is not always possible in these cases, especially where the bladder is involved. The bladder is then apt to be contracted and extremely irritable. And the openings of the ureters may be obscured by ulceration, rendering them difficult or impossible to be seen. In the latter case, where catheterization of the ureters is very desirable, the preliminary hypodermic injection of indigo carmine is of great service. While ureteral catheterization is not always necessary in order to make a diagnosis, its great value in testing the sufficiency of the presumably healthy kidney can scarcely be overestimated. This is particularly true when the decision as to the advisability and safety of removing the diseased kidney is to be made.

Kümmel, who is the great champion of cryoscopy of the blood, in the paper referred to reviews at length his experience with this test in over a thousand cases. He reiterates his previously published views that this is the most reliable and most accurate method we have of determining renal sufficiency. In not a single case in his extensive experience have the results of this method been misleading. He explains the cases of Israel and Rovsing, which do not harmonize with his experience, as due to faulty

technic. In cases of renal tuberculosis, where catheterization of the ureters is impossible, this is the most reliable test of renal sufficiency which we possess.

Treatment.—In cases of unilateral renal tuberculosis, nephrectomy is the only operation to be considered, and has given satisfactory results. The earlier this is done the better. The general opinion now is that one should never resort to partial resection. Nephrotomy may be performed in cases of mixed infection and abscess formation, but should be considered only as a palliative operation. Secondary nephrectomy should follow as soon as the patient's condition permits.—H. A. FOWLER.

The Washington Home for Incurables.—The Washington Home for Incurables was incorporated March 6, 1889, and its object, as stated in Article I of its by-laws, is "to provide a comfortable and permanent home for persons afflicted with any incurable physical disability or disease, for whom no provision exists elsewhere." Previous to this time there was no provision for such cases, and the need of such an institution was most urgent.

The Home was first located on Meridian Avenue, Mount Pleasant, in a building which soon proved altogether inadequate for the increasing demands made upon it, and in 1892 land was obtained north of U Street, between Thirty-first and Thirty-second, on Georgetown Heights. Here a new building, costing over $50,000 was erected, and here the Home has continued its good work ever since. The new building was made possible by the generous liberality of several of its friends and without any public appropriation.

The Home is open to any person with an incurable disease except those suffering from mental derangement and contagious diseases, and is intended for those chronic cases which are not desired by a general hospital.

Patients who are able to pay anything, however small, toward their maintenance are expected to do so, but those who are not, are cared for absolutely without charge, and no discrimination is made either in admission or accommodations between those who do and those who do not pay.

Application is made on a blank form, and must be certified to by a reputable physician; the applicant is then examined by a member of the medical staff as to his eligibility, and, if found suitable, is placed on the waiting list, as the Home is unfortunately not large enough to accommodate all who apply. Efforts are now being made to obtain funds to enlarge the building to meet, as far as possible, the ever increasing demands.

Some years ago provision was made for a cancer ward, also a

children's ward. Only four cancer cases can be received, and many of these poor unfortunates must be turned away.

All the patients are given the best of care, and each patient has a private room, and these rooms have been furnished by some friend of the Home as a memorial. When full there are accommodations for 46 patients—31 females and 15 males.

The Medical Staff comprises four attending physicians, nine consulting physicians and a resident physician.

The Home receives an appropriation of $4,000 from Congress, and the other funds necessary for its support are raised by private donations and by charitable entertainments.

The management is in the hands of a Ladies' Board, and too great praise cannot be bestowed upon these good women for their untiring zeal and energy in providing means to make it possible for the Home to do its best work.

A visit will give a better idea of the good which is being done and the kind attention which the patient receives, and the members of the Medical Society are most welcome at any time.

The Medical Staff consists of Drs. Wellington, Nichols, J. D. Thomas, Lee and Dunlop.—J. R. WELLINGTON.

The Bruen Home, located at 436 M Street, N. W., was undertaken October 24, and was duly incorporated November 10, 1896, as a Home for destitute, deserted and friendless women and children. Women of known vicious character or of evil life are not received. There is also a nursery where children can be left while mothers are at work. The object is to furnish a more or less temporary home for homeless, destitute or deserted young mothers and women temporarily out of work. It is always preferred that the mothers live in the Home with their children, even though they may go out to day's work. Children whose mothers cannot live in the Home are cared for at a nominal charge. The moral training, uplifting influence and protection from temptation is the prime object of the association. Any woman in need of such help will be kept in the Home if she proves herself worthy. Pauperism is not encouraged, for self help is continually taught. The woman who will not do the work assigned her to the best of her ability, but who is found to be simply making a convenience of the Home, will not be retained.

October 31, 1906, the Home completed its tenth year. The receipts for the first year were $2,313; for the ninth year $6,891. The receipts of the seventh year, $7,684, included a legacy of $2,245 from Mrs. Sarah E. Barron. The statistics for the year ending October 31, 1905, were as follows: average number of children in the Home, 94; and of adults, 19; children sent to hospital, 5; adopted, 1; returned to their homes, 74.

Dr. George N. Perry has been the medical advisor of the Home since its incorporation. The remaining staff comprises Drs. E. H. Egbert, W. A. Frankland, N. D. Graham and W. P. Reeves. Drs. Balloch and Dufour are consultants.

Except for occasional epidemics of eruptive fevers among the children, no serious disease occurs in the Home.—G. N. PERRY.

Health Department, District of Columbia.—

Memorandum showing the relative prevalence of certain communicable diseases from August 1, 1905, to November 1, 1905, and the same period of 1906, in the District of Columbia.

DIPHTHERIA.

1905.			1906.		
Cases on hand August 1	5		Cases on hand August 1	7	
Cases reported from August 1, to November 1	117		Cases reported from Aug. 1, to Nov. 1	91	
Cases discharged, recoveries		76	Cases discharged, recoveries		56
Cases discharged, deaths		15	Cases discharged, deaths		8
Cases on hand Nov. 1		31	Cases on hand Nov. 1		34
Total cases	122	122	Total cases	98	98
*Per cent. of fatal cases		16.5	*Per cent. of fatal cases		12.5

SCARLET FEVER.

1905.			1906.		
Cases on hand Aug. 1	6		Cases on hand Aug. 1	10	
Cases reported from Aug. 1, to Nov. 1	37		Cases reported from Aug. 1, to Nov. 1	31	
Cases discharged, recoveries		28	Cases discharged, recoveries		21
Cases discharged, deaths			Cases discharged, deaths		
Cases on hand Nov. 1		15	Cases on hand Nov. 1		20
Total cases	43	43	Total cases	41	41
*Per cent. of fatal cases		00	*Per cent. of fatal cases		00

TYPHOID FEVER.

1905.			1906.		
Cases on hand Aug. 1	128		Cases on hand Aug. 1	177	
Cases reported from Aug. 1, to Nov. 1	675		Cases reported from Aug. 1, to Nov. 1	621	
Cases discharged, recoveries		553	Cases discharged, recoveries		510
Cases discharged, deaths		80	Cases discharged, deaths		79
Cases on hand Nov. 1		170	Cases on hand Nov. 1		209
Total cases	803	803	Total cases	798	798
*Per cent. of fatal cases		12.7	*Per cent. of fatal cases		13.4

SMALLPOX.

1905.			1906.		
Cases on hand Aug. 1	10		Cases on hand Aug. 1	0	
Cases reported from Aug. 1, to Nov. 1	15		Cases reported from Aug. 1, to Nov. 1	0	
Cases discharged, recoveries		19	Cases discharged, recoveries		0
Cases discharged, deaths		2	Cases discharged, deaths		0
Cases on hand Nov. 1		4	Cases on hand Nov. 1		0
Total cases	25	25	Total cases		
*Per cent. of fatal cases		9.5	*Per cent. of fatal cases		00

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD, *Health Officer.*

The Woman's Clinic, 1237 T Street, Northwest, was established in October, 1890. Its objects are, first, the establishment in the District of Columbia of an institution for the medical and surgical treatment of women and children by women physicians; second, the establishment as soon as possible, in or near Washington, D. C., of a Hospital and Sanitorium for women and children, with a view to suitable clinical instruction in both institutions.

Since the establishment of the Clinic the women physicians at-

tending have treated a large number of patients without distinction of race or creed, whose limited means have made them unable to meet the ordinary charges for medical treatment. The small fee of ten cents, which is charged those who are able to pay it, while inadequate for the maintenance of the Clinic, prevents those applying for treatment from considering themselves charity patients and losing thereby some of their self respect.

The income of the Clinic consists of these fees, of some annual subscriptions and of a small appropriation from Congress. For the year ending June 30, 1906, the receipts from all sources

amounted to $1595.33. The number of visits of patients to the Clinic for the first year of the organization was 980; for the year ending June 30, 1906, was 4481. This practically demonstrates the need and usefulness of such an institution.

Many women are employed in various capacities in this city who are not only self supporting but have others depending upon them, and who, in consequence of overwork or exposure from lack of proper sanitary conditions, become prostrated and in need of assistance. It too often happens that, through a natural womanly modesty, they shrink from an examination by a male physician and delay placing themselves under treatment until almost if not quite incurable. To such The Woman's Clinic is an especial boon.

It has frequently happened that surgical, medical and obstetrical cases have applied for admission to the Clinic, but for lack of funds and necessary hospital facilities they have been obliged to go elsewhere. These needs are pressing, and it is the earnest desire of the Board to add to the clinic a building for hospital purposes at the earliest possible moment.

In 1903, the Board bought the property at the northeast corner of Thirteenth and T Streets, Northwest. The location is satisfactory, and there is some spare ground on which we hope to build the much-desired addition for hospital purposes. To those who can aid in paying for the present building and the needed improvements, it presents an opportunity for regular contributions, for endowment, or for bequest. It is a broad educational as well as charitable work.

The clinicians are Drs. Heiberger, Norris, Foye, Strobel, Bartsch and Holmes. There is also a Consulting Staff.—Mrs. C. P. Burleigh.

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WASHINGTON MEDICAL ANNALS

THE COMBAT OF SCIENTIFIC MEDICINE WITH SUPERSTITION.*

By JAMES DUDLEY MORGAN, A. B., M. D.,

Washington, D. C.

President of the Society.

The honor you bestowed in electing me to the high office of the presidency of our Society I shall always cherish as one of the most fortunate and happiest occasions of my life.

The subject of my address will be "The Combat of Scientific Medicine with Superstition." That the entire healing art of medicine in the early ages was founded on witchcraft and superstition is a lamentable fact to admit. The gods, the oracle and the stars were supposed to direct all our destinies, and pilgrimages to and sojourns at the temples were made for all conceivable requests and for the alleviation or betterment of a variety of sufferings and deformities. Before and long into the Christian era, much of the occupation of the priests of the temple was in administering to the sick and lame. They were the healers of the soul as well as the body, the soul, so long as there was life within the body being looked upon more as a physical attribute and only becoming supernatural upon the death of the body. In many ancient religions those who doubted the power of the priesthood to cure and alleviate disease were persecuted by sword and fire. In a period before the founding of Rome "the priest appeared as physician, prophet, interpreter of dreams, raiser of tempest, etc."* "Among the Medes and Persians, priests were considered endowed with supernatural powers and appeared among the people, not only as physician, but as a miraculous being crowned with a halo of the supernatural.†"

* Read before the Medical Society of the District of Columbia, December 12, 1906.
† Magnus, "Superstition in Medicine," p. 26; p. 25.

It was not long before the quick-witted and ingenious saw the credulity of human nature and how easy the gain and advancement were to riches and position by performances of the seeming marvelous. So it was there sprung from the priesthood a number of sorcerers and charlatans who called themselves Magi and who professed special powers to cure diseases. These magicians had a long run of favoritism and affluence. They were publicly proclaimed benefactors and courted and endorsed at court. Antoninus Pius made official proclamation in the forum of the importance of magicians, and Emperor Marcus Aurelius tells of a marvelous cure for hemorrhagic cough and vertigo which the magician prescribed. The audacity and fearlessness of these magicians became so great that there was nothing that would not permit of cure. The sufferings and tortures that human beings endured, often for an imaginary complaint, brought the disciples of quackery into disrepute, and caused Emperor Septimius Severus and later Emperor Diocletian to take energetic steps to check and abate the practice of such frauds and deceits upon a confiding people.

The Greeks even in early antiquity were for restricting and elevating the practice of medicine, and enacted such laws that all who proclaimed themselves followers of Æsculapius were to publicly substantiate their claims for such recognition and to submit to interrogations upon their knowledge of their subject. Hippocrates and his disciples, and later Galen and his associates, endeavored to separate medicine from the delusional and put it on a practical and rational basis, but they always had much to contend with from the Romans, who encouraged the most fantastical and revolting ideas of the cure of some diseases. In book 28, chapter 4, of Pliny, you will find quoted that "to cure headache you should tie the rope of a hung criminal around the forehead." "Epilepsy may be cured by the patient wearing the forehead of an ass next to his skin." "Any one suffering with colic should take the feces of a wolf which should contain small particles of bone and enclose them in a tube and wear this amulet."*

Galen, when he went from Pergamus to Rome to practice medicine, was scoffed at and insulted in the streets of Rome. His deep learning and knowledge of anatomy, however, soon brought

*Magnus, "Superstition in Medicine," p. 40.

him the respect of the better class, being for several years physician to the Emperor. He never, though, acquired much practice, the antipathy of the Romans for the Greeks, intensified by the hatred and envy of the sooth mongers and priest crafters, brought down the maledictions of the populace. Pliny, in many of his writings, endeavors to belittle the work of Galen by associating him with the magicians. Galen continued to live at the Capital of the World for a number of years, but finally left, disappointed with the harshness of his reception and the difficulty of elevating the profession. To Cornelius Celsus, who flourished in the first century, during the reign of Tiberius, medicine owes much of its progress. He interpreted the writings of Hippocrates, systematized the teaching of medicine, encouraged the clinical observation of patients and left us writings on surgery and diagnosis which today are wonderful in the accuracy of their detail.

It was often easier and quicker to soothe the populace or allay excitement incident to an epidemic or a reverse in arms by resort to the so-called appeasement of the gods, and as human nature and excitement were and always, we suppose, will be best controlled by delving in the mysterious and inexplicable, so the temples with their oracles and priests had to be supported and encouraged. "It is better that men should be governed by priestcraft than by violence," says Macaulay. To the health seeker and his friends it was made known that if the alleviation and cure of the disease were not rapid, or perchance the person died, then it was understood that either the gods were still angry or the patient had not followed the directions of the oracle ; should, though, the patient recover, then the gods were to be further propitiated with offerings of myrrh, incense and gold. Many of these cases, among the wealthier class, were required to remain and sleep in the temple, so as to get the full benefit of the halo which surrounded the place. A belief to be found all over the world and at all times, is that certain diseases can be healed by the patient merely being touched by the king or queen, the pope, the high priest or some other exalted person. When Charles II came to the throne this belief was at its height in England, and he "touched" no less than 24,000 persons. Queen Anne was the last sovereign in England who performed the ceremony of touching, and Dr. Johnson is named as having been taken to her as a child for that purpose. To plant medicine on its own basis

and separate it from church and throne has been the labor of centuries. "Edward the Confessor imagined he possessed the miraculous gift of curing certain diseases by the simple touch and by pronouncing a few sacred words. The Sovereigns of France and England long claimed this peculiar attribute."*

In the Latin edition of the prayer book edited by Thomas Parsel in the year 1727, there is a form of service for "touching for scrofula." A silver touch-piece of James II, which was used in curing various diseases, can be seen today in the British Museum collection.

As the evil spirit was supposed to be the cause of many maladies, a cure was only effected by calling in the priests of the church. "The Jesuit Fathers at Vienna in 1583 glorified in the fact that in such a contest they had cast out 12,652 living devils."† Martin Luther was also subject to this same delusion. "When once in Dersan, he heard of a monster (according to medical opinion it was a rhachitic child) that had grown to be twelve years of age, he advised, in all seriousness that this sinful product of devilish intercourse be thrown into the river Mulde."†

In a hamlet of England as late as 1869, the following notice was posted on a church door: "For the Fits. A young woman wishes to ask the favor of 30 young men to give one penny each and no more next Sunday afternoon, 21st March." This young woman got the thirty pennies, had the officiating clergyman give her a half a crown for them and then had a blacksmith make the half crown into a finger ring. Gen. Washington's diary contains a note of the wearing by Miss Patsey Custis of an iron ring for fits.‡ It is the general opinion that Miss Custis died eventually from epilepsy.

"The upheaval which the Reformation brought in the sixteenth century, separated church and state and also medicine, and made the practice of medicine not dependent upon the touch of the king or the vapories of the priesthood."§ We are today, as of yore and tomorrow, creatures highly imaginative and constantly seeking higher and loftier things even to the supernatural. The inexplicable and fanciful, the mystical and resourceful, will always

*Dunglison's History of Medicine, 1872.

†(White) Magnus. "Superstition in Medicine," p. 195; p. 123.

‡"Feb. 16, 1769. At home all day, Joshua Evans, who came here last night, put an iron ring upon Patcy (for fits) and went away after breakfast."

§"A Book about Doctors," J. C. Jeaffreson, p. 164.

attract and subjugate us. It is astonishing what amount of superstition, mysticism, quackism and fetichism exists today. Yet it is well to remember that there are marvelous escapes and recoveries from injury and sickness, and that the recognition of prayers, if not always successful, at least ennobles the man and raises his thoughts to God; for there is no man who can say that he feels worse because he has prayed to his Creator.

Following the era of scientific medicine of a half a century ago and the progress which is being made in our day, "we should have suspected that the darkness of quackery would disappear before the new light. The Germans, who like to style themselves the Nation of Thinkers, have more quacks today than any other people. Indeed, Saxony and Bavaria have one quack to two regular physicians; in Berlin there is two to nine."*

Pet superstitions and delusions can be found in every household. When there is a case of sickness in the house and some domestic animal dies, you will find that some think the patient will surely recover. The most persistent superstitions in the world are those that are based upon the habits of animals. If one is walking at night and a spider web brushes the face it is supposed to mean that a ghost is following, but in day time it tells that a stranger is coming. The neigh of a horse is a portent of death which will come from the quarter from which his head is pointing when he neighs. The hair of a dog, the skin of a snake and the pelt of a black cat are believed to possess medicinal qualities, while the handling of a toad is said to give warts. German Canadians are full of superstition. A white spider crawling toward one, the howling of a dog, the sight of a snake, all foretell death. The killing of a toad or the crowing of a hen foretells rain. If the cat washes his face it means that visitors are coming. If a bee stings, kill him and the wound will not swell. The black tooth of a hog and the blood of a black hen have curative powers.†

"Some one has been making an investigation as to the survival of medical superstitions in Germany, and his discoveries have been reported in the *Norddeutsche Allgemeine Zeitung*. All sorts of outlandish ideas and practices were found in active prevalence in the marsh lands of Weser. In this District the touch of a corpse's hand is still regarded as curative of many local ills.

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*A. Jacobi, M.D., LL.D., J. Am. Med. Assn., Vol. XLVII, No. 13, p. 977.

† *Brandon Sun.*

In the Wesermarsch the practice is to steal secretly into the room where the dead person is laid out and with the dead hand stroke the afflicted part. In Luneburg Heath the application is especially used as a cure for warts and for cramps in the stomach. Less grewsome is the remedy for hernia still applied in the marsh country. On the night of St. John the Baptist's day, June 24th, a patient must be dragged through the split of a cleft ash tree. Three men bearing the first name of John must perform the operation, and it must be conducted in dead silence. For erysipelas a fire is lighted and a pinch of ashes from it is rubbed on the skin, to the accompaniment of a saying to the effect that the ashes and the sore went over the Red Sea together, the ash came back but the sore never again. Numerous other sayings supposed to have the force of charms, usually when uttered simultaneously with some action, are quoted. The Luneburger, for instance, who has warts, makes the sign of the cross on the warts while gazing at the crescent moon."*

Recently in Georgetown a policeman was bitten by a supposed poisonous snake, and the old remedy of killing chickens, cutting them open and applying them to the bite until the chickens were cold and did not turn black, was tried; 26 chickens were used on the policeman in extracting the poison. This remedy for cramp is used today in other places than Georgetown: "On going to rest put your slippers under the bed and turn the soles upward." In the wards of Garfield Hospital last Autumn there was a patient who insisted on keeping several apples under his bed to help the dropsy. The things that people will carry within their pockets, wear around their necks or body or put on their fingers are legion. Have a white potato in each pocket of your trousers and you will never be troubled with rheumatism; or if you suffer with cough and cold, exchange the potato for a lump of camphor. No doubt there are some of us who now have a horse chestnut in our pocket or are wearing a nickel ring. Several years ago the writer was induced by an intelligent and considerate friend to wear a nutmeg for obstinate boils. "The educated, in fact, are often as superstitious as the most ignorant, though in a different way and along different lines. It has long been noted that those who boast their emancipation from prevailing superstitions are often slaves of the pettiest delusions. How many are free from

* *Washington Post.*

the dread of thirteen? How many are bold enough to marry on Friday? How many fear to draw the sock on their left foot first? Have you a rabbit's foot about you, and do you touch wood after indulging in a boast?"*

In no other Western European country is superstition so prevalent as in Austro-Hungary. Quite recently the Chamberlain's office changed the number of box 13 in the Imperial Opera House and the Imperial Court Theater because the public objected to sitting in a box bearing this unlucky number. None of the rich subscribers who take a box for the year, wanted number thirteen, and for single performances it was just as hard to dispose of. But this superstition reaches its height in medicine. Speaking at the health exhibition, Dr. Heinrich Grun declared that "in many instances superstition, and especially local superstition, was an absolute menace to public health. In the Austrian hospitals one finds no block or pavilion thirteen, no ward thirteen, no staircase thirteen. Very few patients will consent to be operated on on the 13th. And in this respect, Friday, too, is considered just as unlucky. At Carlsbad, Marienbad, Gastein and other famous Austrian resorts nobody wants to begin their cure on Friday."† "The dieting fad also has become a nuisance in London, and a number of well-known hostesses have put their heads together and drawn up a declaration of independence. It is sent out with all invitations and reads thus: "I am sorry to appear inhospitable, but my housekeeper and cook cannot arrange to cater for any guest who is obliged to diet." The food faddist, it seems, has become no end of a nuisance, and although the hostesses might be willing to endure it, the servants have risen in revolt. Complications arise when it is necessary to feed at the same table the carnivorous, the graminivorous and the frugivorous. On one occasion it is said that the Duchess of Marlborough had at her table at Blenheim nine persons who had to be supplied with a totally different class of foods. One lived upon nuts and raisins, another swallowed quarts of boiling water with semi-cooked minced beef, a third was convinced that death lurked in everything containing starch and sugar, and so on, *ad infinitum*."‡

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*Editorial, *Baltimore Sun*, June 8, '06.

† *Pall Mall Gazette*.

‡ Exchange.

The past summer in a neighboring city we saw one hundred and fifty-eight witnesses, by actual count, coming from nearly every State in the Union, two having traveled from Port Angeles, which is 3,200 miles, to testify against a pseudo-physician that they had been swindled and defrauded by him out of large sums of money in buying love powders for numerous ailments and having their horoscope given. Just why breastplates, blue bandages, "water that the sun never shone on" and love powders should cure defective eyesight, falling of the stomach, rheumatism, kidney disease, etc., I suppose many of the dupes are asking themselves the same question now. The campaign of education is more than difficult. In one you may have a psychological feature to deal with: the picture of a rose will induce hay fever; the supposed presence of a cat will bring on a case of hysterics; others must touch the same tree or gate on leaving the house every day or their equanimity will be upset. Dr. Samuel Johnson, of London, always struck the posts on the side walk with his cane, and if he missed one and failed to go back and touch it he was knocked out for the rest of the day. One has the right to believe that the crusade against tuberculosis had accomplished something, but when you read of a white man thirty-three years old trying to combat the disease from which his wife is suffering by keeping her room as near airtight as possible, and in order to accomplish this has nailed down the windows and corked every crevice, you begin to lose hope indeed.

What is the remedy for all this? It is by making the deduction and the rationale so clear and easy that he who runs may read. Bacon says we would "rather believe than examine," besides, we are all governed by an irresistible desire for the unknown, which most generally exhibits itself in a love for the marvelous. These are weaknesses of human nature which we must ever have in mind and try to combat. The physician, President Eliot, of Harvard, declares, stands today before the public as an educator. What an immense amount of good has been accomplished by open talks on tuberculosis! Who doubts now the efficacy and the modus operandi of the sera therapy in many diseases! Away with the various popular superstitions of invoking St. Anthony for erysipelas, of St. Vitus for chorea, of using the "comb" of church bells for shingles, of eating churchyard grass for hydrophobia.

Hippocrates has said, "If one disease is sacred, all are sacred." Today, through intelligent quarantine, physical diagnosis and laboratory research, which in many diseases may represent the exhaustive labors of a quarter of a century, a physican can pronounce with absolute firmness and assurance that such a condition of the environments or of the life and habits of the patient or his physical being *per se* has caused the spread of the disease and the suffering and infirmity incident thereto. "Yellow fever is an example of a disease in which destruction or exclusion of the germs by destruction of the mosquitos carrying them has proven feasible and signally successful in eradicating the disease. Control and purification of the water supply accomplish much in reducing typhoid fever. Scarlet fever has been materially reduced by the institution of quarantine measures."* Diphtheria, since the introduction of antitoxin, has now a mortality of not more than ten per cent.; smallpox from being a scourge has become, through compulsory vaccination, a rare disease. The cretins and myxedematous have been restored to health and reason. The epileptics, choreics, mildly insane and tubercular, from being housed, nursed and restricted, have been told that we have gotten too far away from nature, and that a return to the simple and rural life will surely benefit all and cure some.

Let us continue the progress and achievements in the 20th century as they have been so forcibly begun and promulgated in the 19th. The work of Pasteur, Virchow, Koch, Ricord, Lister, Holmes, Semmelweis, Roux, Behring, Weir Mitchell, Billroth, Gerhard of Philadelphia, Tait, Fehleisen, Charcot, Ord, Laveran, King, Ross, Manson, Sternberg, Welch, Klebs, Fraenkel, Loeffler, Kitasato, Yersin, Osler, Reed, McBurney, Stiles, de Schweinitz, Murphy, Weichselbaum, Shiga, Mayo, Keen, Ashford, Opie and others make truths about disease clearer than day, and remove from the sphere of doubt and skepticism and of fear and superstition many inexplicable and unnatural causes of disease. The brilliant work of Benjamin Rush,† of America, and of William Tuke in England, and Phillippe Pinel in France, in releasing the insane from their manacles, was an illumination on the road of rational medicine. The microscope alone unravels the mystery of many diseases and enables the legislator and the plebeian to see

*Nichols, *Med. Record*, Vol. 70, No. 18.

†"History of Science," H. S. Williams, Vol. 4, p. 245.

upon the screen the cause of his fear and suffering. We begin to see and understand that our rivers are polluted and the dairies infected; that our school houses are often hot-beds for diphtheria and tuberculosis; that much of our garden produce brings disease upon the table, that the very flies and mosquitoes that are found in the house should be as unwelcome and debarred as hobgoblins and fairies that bring spells with the new moon.

Gen. Forwood said that Dr. Morgan's description of the treatment of the policeman for snake-bite explained why chickens were so scarce and so high. The address was upon a subject of great interest, and Dr. Forwood had heard it with much pleasure. He believed that the science or art of medicine suffered most from superstition during the Middle Ages; he had always felt regretful that so many dark centuries passed by in this mid-era of history in which the progress already made in medical lore was lost, and with such a huge expense of human misery. It is well known that the science of medicine had attained a high plane in ancient Greece, and that the Greeks possessed a medical literature, used many surgical instruments, and were acquainted with various medicines. But all this was forgotten in the Middle Ages; all science and art vanished under a pall of ignorance and superstition for a thousand years. Under the prevailing religious beliefs, all diseases were explained as various manifestations of demoniac possession, and the curative art passed almost entirely into the hands of the priesthood. In all the warfare of this period surely great progress should have been made in military surgery; but, on the contrary, no lessons were learned and experience brought no effort to alleviate the misery attendant upon military operations. The commanding officers were accompanied by members of the clergy of corresponding rank (a general was supplied with two bishops) but there was no medical attendance provided for the common soldiers. A factor which added to the sum of misery which followed in the train of military operations of the Middle Ages, especially in the Crusades, was that the armies were attended by thousands of camp followers of all kinds, including women and children, and the only medical aids relied upon were charms, exorcisms and sacred relics. The tremendous death rate had no effect toward inducing a remedy of the conditions. The theory of demoniac possession formed a basis for all methods of treatment.

Not until the 16th century, 2000 years after Hippocrates, did light begin to break through the darkness. In all the intervening centuries not a step of progress had been made, and the arts of medicine and surgery were discredited and fallen into the hands of barbers and phlebotomists. With the revival of learning,

however, the march of progress began. The works of Hippocrates, Celsus and Galen were reclaimed from the dust of ages of neglect and forgetfulness, and under the leadership of Ambroise Parè, the advance of medical science was taken up and has been steadily pressed forward to its present position.

In regard to supernatural methods of healing which have come down to us in various modernized forms, it is difficult to conceive on what principle the selection of cases is based. Broken bones and dislocated joints found among all kinds of people, good and bad, are not affected by faith ; bleeding arteries are not stopped by faith ; diphtheritic throats are not opened by faith. Neither was ever a bacillus destroyed by faith; and if Nature can be trusted to care for her creatures, she will as surely preserve her bacteria as she will her human beings.

Dr. Kober said that he had enjoyed the address. It was astonishing to learn of the amount of superstition which still obtains among the people. It is this belief in the supernatural which allows Christian Science to exert such a wide influence, makes osteopathy possible, and has so deluded the Senate that it has passed a law to licence osteopaths to practice in the District of Columbia. Superstition in the middle ages was not confined to the laity. As late as the 14th century, the all-pervasive superstition still swayed the seats of learning, and the University of Leipsig promulgated the opinion that the Oriental pest then prevalent was due to earthquakes, to a plague of locusts, and unseen waves of air ; while the University of Paris with equal gravity asserted that it was caused by the conjunction of the planets on a certain day of 1345. The people thought that the pestilence was an evidence of Divine wrath ; propitiation was undertaken, and the Passion Play of Oberammergau has come down to us from this origin.

We now know both the cause and the means of prevention of the plague, and it is indeed a privilege to live in an age of such enlightenment. Dr. Morgan is quite correct in his opinion that the only cure for the superstition that remains is education.

Gen. Sternberg said that he had not had any intention to discuss the able address to which he had listened with so much interest, but he must agree with the speaker that it is most discouraging to find so much superstition still prevalent among educated persons. He had been amazed a short time ago to see a newspaper statement that a general officer of the Army (now retired) had become a devotee of Christian Science. This officer had received some benefit from a fanciful ailment, but it has not been recorded that Christian Science has cured his wife's deafness ! It would seem that the usual general education of the day does not give the people the proper information in regard to even the ordinary pathologic manifestations, and that scientific education is necessary to dispel the superstitious notions so prevalent.

We all know that if an inert colored water were distributed among a thousand persons under an imposing name and with assurances of its curative properties, a certain proportion of cures would be effected. The same psychologic principle is involved when pilgrimages are made to certain shrines and healing springs; among the multitudes who go to such places, certain imaginary ills are cured.

Physicians are not exempt from this intellectual perversion; they are led astray by the vaunted merits of some new drug, and their mistaken belief in its efficacy causes them to find fallacious results from its use, until they are rudely awakened by a disastrous failure.

Dr. Nichols said that while we are felicitating ourselves upon our superiority over the fathers in medicine and lay people of our own day, we would do well to consider the medical superstitions and myths prevalent among our own profession.

For instance, everybody is apt to administer nitroglycerin in the collapse of surgical shock, while any second-year student of medicine could tell us that the physiological action of nitroglycerin is to produce the very conditions to which the symptoms of shock are due, and therefore it is theoretically contraindicated.

Also, we constantly give beef-tea or broth under the assumption that we are administering a powerful food, while as a matter of fact any student of food values would tell us that they have no food value at all and contain merely stimulating extracts. Fothergill states that more lives have been lost by mistaken belief in the food value of beef-tea than by all the Napoleonic wars.

The Health Officer of Providence, R. I., says that we derive no practical benefit from disinfection for the prevention of contagious diseases, and that its only effect is to allay the fears of the populace. This official evidently thinks that the usual municipal precautions are about as efficacious as the unstoppered bottle of carbolic acid which the father of a measles patient kept upon the mantel; when its uselessness was pointed out he said he'd leave it there anyway, it might do some good.

While most physicians recognize the importance of disinfection of typhoid stools, too often the doctor merely directs that a few drops of carbolic acid be poured upon the stool and believes that disinfection is accomplished. But it ought to be well known that to serve any useful end, concentrated solutions of carbolic acid must be allowed to operate for several hours, and some hold that disinfection can be done thoroughly only by boiling.

When we come to doubt our own superstitions, we will be in a better position to criticise those of others.

Dr. Shute said that he had not expected to discuss the address, but he felt it was his duty to protest against a superstition which goes hand in hand with a disease which is the cause of 33 per cent. of the total blindness among infants—the superstition

that lotions of mother's breast-milk and sassafras tea will cure ophthalmia; also, the professional fallacy that this disease may be successfully combated with boric-acid lotions. His remarks were prompted by a distressing case of ophthalmia now in his care. The disease in this child had been allowed to progress until now there is a central corneal ulcer upon each eye, and he knows of no way by which subsequent opacity can be prevented and vision saved.

We know how this disease may be prevented, and we know how it may be kept mild and harmless when it does occur, and he felt that it was his duty to warn the profession against the superstition by which so many eyes are lost.

Dr. Lochboehler said that Dr. Morgan had spoken of the manifestations of superstition in West Washington, and he desired to relate an incident which occurred in East Washington. He had seen a child, with Dr. Adams in consultation, which was suffering from chronic tuberculous meningitis with hydrocephalus. A homeopathic physician, with a large clientèle, had previously been called to attend the case; he made the diagnosis of "water on the brain," and advised that the child be taken out of doors every day and that its little bald head be exposed to the sun in order to dry up the water! As this advice was given during the hottest days of August, the father very wisely dismissed the homeopath and sought advice elsewhere.

FIRST FIFTY CASES OF TUBERCULOSIS TREATED AT STARMONT SANATORIUM.*

By GEN. GEO. M. STERNBERG, U. S. A.

Starmont sanatorium was opened about a year ago for the reception of incipient cases of tuberculosis, in the belief that such cases could be successfully treated in the neigborhood of Washington. The method of treatment has been that now recognized by the medical profession as the most successful, viz: life in the open air, a nutritious diet, and complete rest for febrile cases.

It is now generally recognized that it is not necessary to send patients to distant localities in order to promote their recovery, and that excellent results may be obtained in properly conducted sanatoria located in the vicinity of our eastern cities. This has been demonstrated in Massachussetts, Rhode Island, New York, Pennsylvania and Maryland, and by the experience already

*Read before the Medical Society, Oct. 31, 1906.

gained at Starmont Sanatorium. The advantages of treatment in a sanatorium located near the patient's home are apparent. The depressing influence of homesickness, which has such a disastrous influence upon many young persons who are sent to distant localities, with the mistaken idea that a special climate is necessary for the cure of the disease, is neutralized by proximity to home and frequent visits from friends. Moreover, the expense of a long journey, in many instances, exhausts the patient's resources, and he finds himself obliged to live among strangers, without proper medical supervision, and often with insufficient or improper nourishment.

With reference to *climate* as a cure for consumption, attention is invited to the following quotations:

Dr. Lawrence W. Flick, of Philadelphia, Director of the Henry Phipps Institute, a recognized authority on the treatment of consumption, says: "Tuberculosis can be cured in any climate. All that is necessary is life in the open air, proper food, well regulated and carefully disciplined conduct and, in more advanced cases, properly directed rest and exercise. People who can command these things at home can be cured in their homes. People who can not command them should be treated in sanatoria. Most people can be treated better in sanatoria than in their homes."

On the same subject Prof. Dr. G. Cornet, of Berlin, a writer of international reputation, speaks as follows, in 1904: "Today we rightly regard no climate as specific. Tuberculosis occurs in the warmth of the south, as well as in the colder north and upon lofty plateaus. Recoveries, too, are seen in every clime."

A recent editorial in the *Journal of the Am. Medical Association* (Oct. 20, 1906) refers to this subject as follows: "One distressing feature of the tuberculosis problem is that patients bring hardship on themselves and others by seeking climatic treatment without full knowledge of conditions that await them. Thousands are leaving home without adequate means of support and are becoming burdens on communities which do not deserve the responsibility. We have referred to this several times, and we now repeat the warning because of a protest, published in *Charities*, from C. H. Gilchrist, superintendent of associated charities, Phoenix, Arizona. Indigent consumptives are still pouring into Arizona and New Mexico to such an extent that Mr. Gilchrist says the conditions force the necessity either of excluding all

tuberculous persons or of denying all assistance to the indigent who come. Neither course, he says, is righteous or Christlike, but relief must be had from the present conditions. Phoenix receives yearly tubercular tourists to the number of one-fourth of its population, and a large proportion of these are either indigent or speedily become so. All possible avenues of employment are overcrowded. *Charities* thinks that physicians are chiefly to blame for this state of affairs, and suggests that they should not recommend removal to other climates without warning patients of the stern conditions that will face them if they are without means of support. Physicians can not be held responsible for the action of persons who have simply received the general advice to go to the southwest, but economic conditions demand that physicians spread this warning whenever occasion arises."

In an interesting article recently published in the Johns Hopkins University *Bulletin* Dr. Joseph Walsh reports upon "Tuberculosis Work in Europe." He says:

"At the International Congress of Tuberculosis held in Paris last October there were over 3,000 delegates from all parts of the world. Discussion revealed no new method or specific in the treatment of tuberculosis, and it was generally agreed that sufficient rest, sufficient fresh air and sufficient good nourishment were the only elements in the treatment at present known to science. There is practically no insistence on altitude or climate. The recent sanatoria over the continent are at all degrees of elevation, and the very handsomest and most elaborate are not elevated at all, at least not more than will give them a free sweep of the country, more on account of the view than any other reason."

In the recently published work of Huber—"Consumption in its relation to man and his civilization; its prevention and cure"—the following statement is made:

"An important rôle is not now assigned to any particular climate in the treatment of consumption. Patients are not sent thousands of miles to get well, as used to be the case. It has been found that almost any salubrious climate will be effective. In one respect a change from a low altitude to a very high one is unfortunate, inasmuch as the patient must oftentimes for the remainder of his days live in the latter climate, the rarefied air of which induces a "physiological emphysema." The consump-

tive who does not do as well as he would is apt to change his climate frequently. There is always distress during traveling which is, moreover, positively dangerous when there are cavities and a propensity to hemorrhage.''

With reference to *climate* as a cure for consumption, attention is invited to the following quotations from a circular published by the Illinois State Board of Health:

''While certain climates may be preferred for certain consumptives, it is nevertheless the consensus of opinion of the leading authorities of the day that there is no climate which has a specific curative power over consumption. Many, including Dr. S. A. Knopf, of New York, an acknowledged expert on the treatment of consumption, hold that cures effected in the home climate in which the patients will have to live and work after their restoration to health are more lasting and assured than cures obtained in more genial climes. While it is known that patients cured in the salubrious regions of the West have been able to return and live in Illinois and eastern States from whence they came, it is also known that others can never leave the climates in which they recovered, for on their return to their own State their disease recurs.

''There are many reasons why an attempt should be made to cure a consumptive patient at or near his own home if it be in a climate not unsuitable for the cure of consumption; many reasons why he should not be sent a long distance from home.

''Separation from friends depresses the patient. 'Homesickness' is a malady which often baffles the physician.

''The expense of the journey is a serious drain on his resources and is often incurred unnecessarily. As has been aptly stated by the State Board of Health of Maine, 'many patients could be well put on the road to recovery in their own State at a cost which would barely defray their expenses to and from Colorado and Arizona.'''

The Washington Sanatorium Company was incorporated in January last for the purpose of providing proper facilities for the ''open air'' treatment of cases of tuberculosis occurring in the City of Washington and its vicinity. After considerable investigation a place, which was believed to possess special advantages for the purpose in view, was purchased and the necessary measures taken to prepare it for the reception of patients.

Starmont Sanatorium is located in Montgomery Co., Md. It is situated upon a high point of ground over 500 feet above sea-level and about three-quarters of a mile from Washington Grove, which is the postoffice and nearest railroad station. The property consists of six acres, improved by a commodious new house and necessary out-buildings. The house is surrounded by fine forest trees and is built upon an elevated plateau having drainage in all directions. This house is used as an administration building and is provided with sitting rooms, dining room, kitchen, office, laboratory and bed rooms for the resident physician, housekeeper and servants. *The patients all sleep in tents* of an improved pattern, having openings for ventilation at the top. These tents are provided with floors and necessary furniture. A coaloil stove is provided for each tent in cold weather, to be used only while the patients are dressing or undressing. When in bed the patients are perfectly comfortable even in the coldest weather, and the front of the tent, facing to the south, is left open night and day, except when the patients are dressing. There is a broad covered veranda on the south and east sides of the administration building, where the patients not confined to their beds sit a great portion of the time. In inclement weather they can retreat to the sitting room, where a wood fire is kept up in the open fireplace.

The experience of the past winter shows that patients can be perfectly comfortable in tents, in this latitude; that they do not "catch cold"; that they sleep well, and that night sweats do not occur, even in advanced cases. In summer the tents have been found to be cool and pleasant at night, and at all times they ensure an unlimited supply of fresh air.

With reference to DIET, it is the aim of the Director to follow the lead of those who have had the most experience in the sanatorium treatment of tuberculosis. Milk and eggs constitute the main reliance for restricting the progressive loss of weight, which is a prominent symptom of the disease, and these are given at regular intervals during the day, the object being to induce the patient to take two or three quarts of milk and twelve or more eggs every day.

Upon this diet the patients often gain two or three pounds a week, and several who have been at the sanatorium for four or five months have gained from fifteen to forty-five pounds. Our experience shows that improvement as regards cough, amount of

expectoration, gain in strength, etc., bears a very close relation to the gain in weight.

The results of sanatorium treatment are especially favorable in incipient cases, and Starmont Sanatorium was established especially for the treatment of such cases; but we have had a number of advanced cases sent to us and have not felt at liberty to refuse to take care of them; with the provision, however, that cases requiring the services of a nurse must be accompanied by an attendant, as the sanatorium does not provide nursing service for bed patients. Patients required to keep in bed temporarily on account of fever, etc., have their meals brought to them by the sanatorium servants.

A classification of the first fifty cases treated shows that eight were incipient cases, twenty-seven moderately advanced cases, thirteen advanced cases; and in two the diagnosis was not confirmed. Eleven of the fifty cases remained less than a month. Some of these improved and some returned home unimproved. Of course no very decided results could be expected in these cases, some of which remained but a few days.

Four deaths have occurred at the sanatorium. One, a young lady, died three days after her arrival. Unfortunately she was not seen by any physician connected with the sanatorium before her arrival in a dying condition. Two advanced cases died in about a month after their arrival. Each was attended by a near relative (mother) and both were recognized as hopeless cases. Several advanced cases returned home to die after remaining from two to five months. Three of these had been at Saranac for some time and returned home unimproved.

The eight incipient cases treated at Starmont have all shown remarkable improvement. Six have returned home and two will soon return home, all "apparently well" (100 per cent.).

Of the twenty-seven moderately advanced cases six have returned home "improved" and eleven remain under treatment "improved" (80 per cent.). Eight returned home "unimproved" and two died—one from a sudden hemorrhage, while on a visit home, and one as a result of severe hemorrhages followed by rapid extension of the disease, while at the sanatorium.

Of the cases classified as advanced at the time of their admission, two returned home "improved" and eight returned home "unimproved." As already stated, three of these advanced cases

died at the sanatorium. I do not speak of any cases as cured, as I accept the definition of the Committee on Nomenclature of the National Association for the Study and Prevention of Tuberculosis, viz: that a cured case is one in which "all constitutional symptoms and expectorations with bacilli have been absent for two years under ordinary conditions of life."

The effects of the treatment in all of the incipient and a majority (60 per cent.) of the moderately advanced cases have been very notable. As a rule improvement has commenced at once; night sweats, if present, have promptly disappeared; digestion has improved; anaemia has given place to "the rosy hue of health;" fever has diminished and finally disappeared; the cough and expectoration have improved or disappeared and a decided gain in weight and in strength has occurred. Some of the most favorable results have been obtained during the summer and early autumn, when there was almost constant rainy weather and the atmosphere has been loaded with moisture to an unusual extent.

In view of these results I feel that it would be a great mistake to send persons of moderate means, and especially young persons, away from home and friends, with the idea that this is necessary to ensure their recovery from tuberculosis. It is also a mistake to keep such cases under treatment at their homes in the city when it is apparent that they are not improving, for a few months at a sanatorium at the outset will usually give results that can not be expected when the disease has made considerable progress.

Dr. Ramsburgh said that he desired to substantiate and emphasize Gen. Sternberg's remarks upon the climatic treatment of tuberculosis, and could do no better than to quote from the report of Dr. Flick, read before the National Association for the Study and Prevention of Tuberculosis. (See 1st Annual Report, National Association for Study and Prevention of Tuberculosis, p. 312.) Such thoughts as those quoted had decided Gen. Sternberg and others to establish a sanatorium where tuberculous patients could be treated near their homes. Gen. Sternberg had given his entire time for the past year to this work,—to build up this near-by sanatorium and to demonstrate that tuberculosis can be successfully treated in the climate of Washington. Dr. Ramsburgh himself believes that besides the essential oxygen derived more abundantly from pure fresh air the greatest good obtained from the out-door treatment of tuberculosis is not due to any particular climate, but to the stimulation of the appetite and the

consequent increased nutrition. He said that it behooves the profession of Washington to encourage the work at Starmont, and that the profession owes a debt of gratitude to Gen. Sternberg for his faithful labors at the sanatorium.

Dr. I. Haslup-Lamb said that the discussion gave her an opportunity of presenting an interesting example of house infection. A young woman had pneumonia and later pleurisy with effusion; on account of her ill health she removed to the country. She kept a flock of pigeons and raised squabs for market. Afterwards she moved to another place where, in addition to the dwelling house, there was a small tenant house. This latter building she utilized for her pigeon-house. After residing there for some time she acquired tuberculosis, and her pigeons all became affected with enlarged cervical glands. Dr. Lamb had some of these glands examined and found that they also were tuberculous. Subsequent investigation developed the fact that the former tenant had had tuberculosis.

Dr. Randolph said that he believes with Dr. Ramsburgh that Gen. Sternberg should have a vote of thanks for his demonstration that tuberculosis may be successfully treated at our very doors. He would call attention to the fact, however, that, notwithstanding the cheapness of treatment at Starmont and its proximity, not over one-tenth of the tuberculous population find its benefits within their reach. The other 90 per cent. of the population are so poor, so ignorant, so obstinate, that Dr. Randolph feels discouraged as to the possibility of doing much for them under present conditions. For a year he has been connected with a dispensary for consumptives: out of 70 cases which came under his care, not over 25 came to the dispensary over four times. Of all these cases, there has been only one patient who has fully followed the doctor's directions; even this one is mentally deficient. This patient's relatives have been interested and have helped, and with the out-door method and judicious feeding, this young man has been practically cured. Dr. Randolph's experience has been that the great majority expect to be given some sovereign remedy, and when they find that they receive chiefly preaching, they quickly return to charlatans and patent medicines. They have not the patience, intelligence, nor strength of character to follow directions. He has been enabled, however, to make some interesting observations. By carefully going into the history of these patients, he has found that in nearly every case they have been exposed to contact with other tuberculous subjects for a considerable length of time before the symptoms developed in themselves. Another point he has observed is that a considerable portion of the cases are first seen in a relapse; that is to say, a careful inquiry into the history will show that they have had a prior unrecognized attack which has been spontaneously arrested. This observation is confirmed by the frequency with which healed tuberculosis is discovered *post mortem*.

Whether the prognosis for incipient cases is good or not depends upon what is meant by incipient; very many cases may be seen where the tuberculous process has gone on for years with a wavering but usually equable balance between nutrition and waste, with whom the prognosis is much better than with a fresh case where the nutritional balance obstinately inclines toward waste.

Dr. Kober said that it must be most gratifying both to the profession and to Gen. Sternberg to know what has been done so close at hand in the fight against tuberculosis. He knows that Gen. Sternberg was actuated by purely sympathetic motives in giving his time and energies to this work. The report upon the cases thus far treated is most satisfactory; in early cases the disease has been arrested, in late cases lives have been prolonged; although the sanatorium was designed for the treatment of incipient tuberculosis, even in the advanced cases this amelioration of symptoms is much to be desired.

So far as the rewards are concerned, no one interested in the project has much money invested and the financial return is not to be considered. The gratitude of the patients is sufficient reward for any one; the work is benevolent, and one who sees the welcome given to Gen. Sternberg when he visits the sanatorium, would appreciate the service given to these patients and would understand the satisfaction felt by Gen. Sternberg in giving it.

Dr. Reyburn said that he found a very personal interest in Gen. Sternberg's address, in that Dr. Reyburn himself suffered from tuberculosis about forty years ago, but happily recovered. He believes thoroughly in the efficacy of small institutions, and thinks that a number of such are needed, and would serve a better purpose than a few larger ones. The best principle to be followed is segregation of tuberculous patients and not aggregation. While he is heartily in sympathy with the work at Starmont Sanatorium, his hope is that it will not grow too large. He has read a late report from a dispensary for consumptives in New York where the method of hypernutrition is in vogue, and he desired to enter a protest against the ingestion of quantities of food in excess of the powers of absorption and assimilation. Such a method, to his mind, could be of no possible benefit, and that it is capable of harm is shown by the necessity of frequently administering purgatives to unload this unused excess from the intestinal canal.

Reports indicate that consumptives taking the open-air treatment do better in winter than in summer. What beneficial quality has cold air ? As air grows colder more oxygen is contained in an equal volume; at freezing point the increased oxygen content is as much as 10 per cent. He believes that this physical fact explains the benefit derived from winter air.

Thanks are due to Gen. Sternberg; he has been the prime mover in the sanatorium project, and the profession should encourage him.

Dr. J. D. Thomas desired to call attention to a benefit derived from sanatorium treatment even when the patients cannot remain as long as desired. They are trained in the best methods for caring for themselves; they learn how to eat, to dress, to sleep, to take their exercise. One of his patients had received this instruction at Starmont and it had been of the greatest value.

Dr. R. S. Lamb wished briefly to report a case, which illustrated several points mentioned during the evening. He had been called to see a young woman, one evening last Spring, because of a laryngeal complication of pulmonary tuberculosis of five years' duration, the last four years of which were spent under the supervision of and with an occasional visit from Dr. John Russell of New York, his treatment being followed, including the use of some 300 bottles of emulsion and milk and eggs *ad nauseam*.

Dr. Lamb found an edema unassociated with any ulceration, but simply due to imbibing more fluid and other food than could possibly be used by one person leading a sedentary life. There was marked dyspnoea, frequent respiration, frequent bounding pulse, and the patient had passed sixteen stools during the day, showing mostly undigested curds. The treatment instituted was simple. Ice to the throat and front of chest, hot-water bag to the back, and the diet reduced to that kind and amount of food desired by the patient's palate and appetite. The result was immediate relief and gradual toning up, with re-establishment of equilibrium and with a low arterial tension quite in keeping with her general environment.

All went well until August, when, because of the desire of her father, that everything known to medical science be done for her, and he had learned that injections of tuberculin were being given at a sanatorium in Asheville, N. C., she was sent, against my judgment, to this sanatorium. She left here in good condition, being able to walk to her train, and arrived there without great fatigue or discomfort. During the first 24 hours, I was told, her urine, sputum, feces and stomach contents were taken for examination, blood pressure recorded, 90 mm., and physical examination was made by the first assistant attending physician. Strychnine was ordered to increase the blood pressure to normal and morphine to allay nervousness and promote sleep throughout the night. After 48 hours of such treatment the patient went into collapse and died.

Within ten days after deciding to go to the sanatorium, she was buried in Washington. The case illustrates very well the advisability of having a sanatorium near here, where competent physicians are employed and the family physician may visit, and

there is an absence of those mercenary motives actuating most of the individuals connected with such institutions; the folly of sending patients far from home, among strangers and strange physicians, who treat diseases and not the diseased individual patient, and are without that sympathy we all know to be so necessary to the welfare of patients.

Gen. Sternberg said that he realizes only too well that there are many, many persons who require sanatorium care who are unable to afford even the moderate expense at Starmont. But it is the province of Congress to provide for these unfortunates. Of course, he and those associated wite him could not undertake so huge a work. The Municipal Tuberculosis Hospital, the Dispensaries for Consumptives, the public lectures, these are all designed for the relief of this class of persons. Starmont Sanatorium was designed to reach, and does reach, those who would not go to a municipal hospital and cannot afford to go away.

SIMPLE RETINITIS.*

By R. S. LAMB, M. D.,

Washington, D. C.

It is my pleasure and privilege to speak to you upon the subject of Simple Retinitis, called also Hyperemia of the Retina, which, being simple, is sometimes overlooked in our examinations of eyes.

As it is perhaps well in considering a diseased condition of any part of the body to begin with the normal, I hope to be pardoned for going somewhat into detail regarding those structures composing the retina before proceeding with the discussion of Simple Retinitis.

The retina is formed from the posterior layer of the ectoderm in embryonic life, and later proliferates and separates into its different layers, the normal structure of which I will, with your permission, briefly describe.

First: The inner layer is that with which we are most concerned. It is known also as the nerve-fiber layer and consists of the non-medullated axis cylinders of the ganglion cells extending towards the disc to form the optic nerve. This layer increases in thickness as the disc is approached. It is bounded internally

*Read before the Ophthalmological Society of Washington, November 16, 1906.

by the internal limiting membrane and externally by the ganglion cell layer and contains the larger blood vessels. The arteries have an endothelium-lined intima, a media with inner circular and outer longitudinal muscle fibers, and an adventitia rich in elastic fibers, the outer of which run longitudinally. As the vessels diminish in size, the media is the first to disappear. The veins lined with endothelium have almost no media and are very rich in elastic fibers. The capillaries are mere endothelial tubes. There are no lymph vessels, but lymph spaces are to be found about the blood vessels.

Second: The Ganglion Cell Layer consists of large multipolar ganglion cells, a single layer deep except at the macula, where they lie six to eight deep.

Third: The Inner Reticular Layer consists of a network of fine nerve fibers derived from the bipolar cells of the inner nuclear layer.

Fourth: The Inner Nuclear Layer consists of rod and cone bipolar cells with their nuclei and amacrine cells having no axis cylinder processes. At the fovea there are no rods, but the cones are narrower and longer than elsewhere, especially their inner segments. In the foveola the inner segments are again short and the layer is reduced to the cones with their nucleated fibers. The bipolar cells at the macula are somewhat obliquely disposed.

Fifth: The Outer Reticular Layer consists of a network of fine nerve fibers derived from the bipolar and other cells.

Sixth: The Outer Nuclear Layer consists essentially of the parts of the neuro-epithelial cells which contain their nuclei. The fibers which pass inward from these cells are known as Henle's fibers.

Seventh: The Rod and Cone Layer.—The rods and cones are neuro-epithelial cells having an outer and an inner segment. They vary in form and distribution, the cones alone being present at the macula, the rods being more numerous elsewhere. Their basement membrane is the external limiting membrane. (These layers disappear at the ora serrata.)

Eighth: The Pigment Epithelium Layer consists of low cubical, polygonal, usually hexagonal, cells with round nuclei. They are smallest and most regular at the posterior pole. In front of the equator they are found large and multinuclear, especially near the ora serrata. They send amoeboid processes between the rods and cones.

With this brief description of a normal retina I will proceed to consider the microscopic pathologic changes in simple inflammation of the retina. In the early stages an oedema occurs in the retina as a result of inflammatory transudation. In the nerve-fiber layer the axis cylinders are separated from one another and the swelling is increased near the disc, because of the thickness here of this layer. (These fibers are held together by the fibers of Müller, which are formed from the neuroglial cells and form the limiting membrane.)

In the ganglion cell layer the same separation takes place, the spaces in which the cells lie becoming so distended that the cells no longer fill them.

In the nuclear layers the cells still show a tendency to separate, following the direction of the separating Müller's fibers. The oedema is also great in the outer reticular layer, where the fluid collects and presses upon the nerve fibers on the one hand and the more resistant Müller's fibers on the other, forming spaces which seem like cysts.

The swelling leads to the distension of the nuclear layers, changing both their depth and outline. Owing to the resistance of the sclerotic the swelling increases ; this aggravates the distension of the nerve-fiber layer and the inner layers of the retina are pushed in on the vitreous, making the inner surface wavy and uneven. Henle's fiber layer suffers especially at the macula. As the rods and cones easily absorb water they become swollen and homogeneous, forming spherical droplets and eventually a granular débris. This layer may be separated from the external limiting membrane, giving a wavy, uneven appearance.

It is possible for oedema of the nerve-fiber layer to pass off without doing any permanent injury, but this is impossible when the outer reticular layer is involved, though this and the other outer layers are only late affected. Usually in Simple Retinitis the inflammation is not so severe as to cause great swelling or the exudation of polymorphonuclear leucocytes. The oedema, being usually limited to the inner layers, is much more easily absorbed. In more severe inflammations the other layers are affected and infiltration occurs, the walls of the vessels become disorganized and give rise to extravasation of plasma and leucocytes and sometimes hemorrhages.

The cases in which these changes may occur, included by some

authors under the title "Simple Retinitis," I feel do not properly belong to the present discussion.

Turning to the ophthalmoscopic appearance of the diseased condition in simple retinitis, one notes the tortuosity of the vessels of the retina, especially the arteries, and sometimes arterial pulsation. There is more or less redness of the disc and hyperemia of the retina. There is haziness of the disc and its neighborhood, and *the hair-like capillary vessels crossing the disc are apparently broken or totally obscured. Although I have not seen this last characteristic recorded in any of the books*, I have found it so frequently in my own practice, both office and clinic, and I have been told by other observers, upon inquiry, that they see it quite frequently in the very earliest stages of a simple retinitis, that *I believe it to be a valuable diagnostic sign when considered in connection with the subjective symptoms.*

One of the earliest signs of this condition, as noted by De Schweinitz, is the tortuosity of the vessels at the periphery of the fundus. As to the causes of the condition, it may occur from over use of the eyes with poor correction or non-correction of refractive errors and with poor illumination, exposure to cold or to excessive light or heat, or vascular changes, and some general pathologic condition ; it occurs in anemia as well as in plethora. It may be due to a disturbance of the vasomotor centers, as in worry. It may occur secondarily to choroiditis or iritis, to heart disease or neurasthenia.

Perhaps the most frequent basic cause of simple retinitis is faulty metabolism brought about either by improper food, or food improperly cooked or improperly eaten. Other habits of life in addition to that of eating bring about a change in the blood-vessel walls. These, of course, are predisposing causes. The subjective symptoms consist of photophobia, more or less impairment of vision, distorted vision, as micropsia or macropsia, contraction of the visual field, scotoma and, together with the above symptoms, lachrymation, blinking, conjunctivitis, generally of a follicular character, and the ophthalmoscopic picture, are usually quite sufficient for a diagnosis. The prognosis is usually favorable if the case is seen early and the patient is willing to undergo the treatment as laid down. The inflammation may subside entirely, or certain atrophic changes may take place causing impairment or total loss of vision. Hemorrhages may

occur with choroidal changes or we may have a post-neuritic atrophy.

The local treatment consists in rest for the eyes, protection from light, as by a smoked glass ground in the distance curvature, and proper glasses for near vision, with hot applications and perhaps normal salt injections. The internal treatment consists in regulating metabolic processes by diet or medicines, relieving constipation and toning up the vascular system, the use of mercury, sodium iodide and wine of colchicum.

In conclusion, let me express my belief that many of the refractive cases which "go the rounds" unrelieved of their annoying, uncomfortable symptoms are those of "simple retinitis," and that they are usually easily relieved of their ailments when the proper treatment is adopted.

This one fact will, I hope, be a sufficient excuse for my having brought before you a subject so simple as Simple Retinitis.

POST-OPERATIVE COMPLICATIONS CONNECTED WITH THE KIDNEY AND URETER.*

By G. BROWN MILLER, B. Sc., M. D.,

Washington, D. C.

My paper had included in a brief and general way the whole subject of post-operative complications connected with the urinary tract, and applied only to cases of obstetrics and gynecological operations. Finding the subject too long to be included in the time during which I would be tolerated, I have limited my remarks entirely to the chief complications connected with the kidneys and ureters.

All of us who have done serious abdominal or gynecological operations have been worried afterwards by complications arising which are due to kidney or ureteral disease or injury. Every one watches the urine carefully until danger is past. None of us knows, at times, just what certain symptoms mean, and I invite your attention to these complications which interest me so much.

Kidney Complications.—During the administration of ether there is a diminution in the amount of urine secreted and albumin

*Read before the Medical Society, November 7, 1906.

generally makes its appearance. Thompson and Kemp (*Med. Record*, 1898, 54, p. 235) found in experiments on animals that in dogs there was a constant decrease in the amount of the secretion, and under free and continuous etherization a complete suppression of urine occurred. Albumin appeared early even under moderate anesthesia and increased in amount, until just before suppression occurred it amounted to 60 per cent. by volume. Chloroform had much less influence upon the urinary secretion, the urine continuing to flow until just before death and albumin appearing only after prolonged anesthesia. According to Kelly and Noble, Russell (*Johns Hopkins Hosp. Rep.*, Vol. III, p. 433), Ogden (*Jour. Bost. Soc. M.*, 1897, No. 15, p. 18) and others, in a large percentage of cases, albumin and casts make their appearance in the urine after operations. Their presence is not, as a rule, significant, and is due probably to circulatory changes in the kidneys, for in a few days they entirely disappear. Sugar is exceptionally found after anesthesia and is likewise of little significance. The quantity of urine is markedly diminished during the first few days after operation, the amount being usually only 500 to 600 cc.

Acute Nephritis following gynecological operations is an extremely rare affection, except in cases of post-operative pneumonia, sepsis and ileus. Independently of these diseases it is seldom seen. In the first 7,000 gynecological operations at the Johns Hopkins Hospital, I could find only two such cases where the symptoms of nephritis were marked. Its causes are cold, the use of turpentine or carbolic acid, infections, and to a certain extent, perhaps, the action of the anesthetic. Acute nephritis frequently accompanies intestinal obstruction, and is, at times hemorrhagic, in character.

The *symptoms* vary considerably and the *diagnosis* may in many cases be obscure. In one of our cases there was no oedema. The nephritis followed a suspension of the uterus and perineorrhaphy and the symptoms were as follows: Temperature 102–103, convulsions, stupor, the involuntary passage of feces and urine during the convulsions, headache, defective eye-sight, anaemia and nausea. The urine contained a large amount of albumin and a large number of hyaline and granular casts. She eventually recovered. In the other case the nephritis was accompanied by mania. Although acute nephritis arising in previously

healthy kidneys rarely occurs *after* gynecological operations, chronic nephritis frequently exists at the time of operation and has a marked influence upon the extent of operative procedure, the prognosis, and after treatment.

Suppression of Urine.—As has been previously noted, for the first few days after operation there is a marked diminution in the amount of urine secreted. This is due to the recumbent position, the diminished ingestion of fluids, the loss of blood, perhaps the action of the anesthetic, fever, and congestion of the kidneys. In some cases, however, the amount of urine and urea remains so small that we look for some cause of the diminution or suppression.

The chief *causes of urinary suppression* are as follows: nephritis; blocking of one ureter, or serious injury to one kidney with coexisting disease of the other; the ligation or clamping of one or both ureters; removal of the only kidney; obstruction of the bowels; and collapse after severe operations.

In the 7,000 cases already referred to the ureter is known to have been accidentally ligated or clamped fifteen times. In twelve of these cases the ligation or clamping was discovered before the patient left the operating table and the error remedied. In one case of vaginal hysterectomy for carcinoma of the cervix, the ureter containing a bougie was clamped and the bougie broken off, a portion of it being left in the ureter. The condition of the patient prevented any operative procedure for its removal. Her death on the seventh day after operation was probably due in part to the accident. In another case, where the catheterized ureter was clamped and the clamp removed, the ureter was so injured that a uretero-vaginal fistula resulted but healed in a few weeks without operative procedure. In the remaining ten cases no untoward results are known to have arisen although in one instance the ureter was twice ligated and once clamped. Of the three cases in which the accident was not discovered, two died and one developed a uretero-vaginal fistula. In another case almost total suppression of urine occurred after the removal of a large calculus from one kidney when the other was almost totally destroyed by a second stone. The largest number of cases of urinary suppression probably occurs in patients where one kidney is removed when the other kidney is likewise diseased. The greatest care should always be exercised to ascertain the exact

condition of both kidneys before the removal of either. This can be done only by the examination of the separated urines, palpation and inspection of the kidney being valuable aids, but without the urinary examination they are not to be depended upon. The necessity of repeated and careful urinary examinations is to be emphasized in operations for incarcerated fibromyomata or other conditions where the kidneys are apt to be affected from pressure upon the ureters. In one of my cases, where after a difficult hystero-myomectomy the patient died from urinary suppression, there was found at autopsy one atrophied kidney and an acute nephritis in the remaining organ. Two cases of complete suppression due to obstruction in the small intestine have come under my observation. Suppression of urine in previously healthy kidneys as a direct result of the anesthetic or collapse is rare as a post-operative complication.

The *diagnosis of the cause* of the suppression is very important, especially if there is a possibility of occlusion of the ureter. The diagnosis of occlusion of the ureter is usually very difficult to make, there undoubtedly being patients in whom one ureter is occluded at operation and no symptoms arise during the convalescence to indicate its occurrence, or in whom the symptoms are confounded with those which so frequently follow serious laparotomies. The important points in making a diagnosis of the condition are (*a*) pain along the course of the ureter and in the region of the kidney ; (*b*) the nature of the operation and the probability of the occurrence of the accident, and (*c*) complete suppression of urine or marked diminution in the amount passed. The last sign is of little importance unless found in combination with at least one of the others. In cases where there is a strong probability of the accident having occurred the ureters should be catheterized if the condition of the patient warrants such a procedure.

The *treatment* depends largely upon the cause. When the ureter is obstructed the obstruction should be removed just as soon as a diagnosis can be made. In ileus, operative procedure for its relief is usually too late after suppression occurs, although it should be tried. In all cases where there is no obstruction of the ureter the treatment consists in cupping the loins, hot applications, free purging, and sweating with pilocarpin or the vapor bath. Diuretin is recommended after the secretion has started.

Irrigation of the rectum with hot salt solution by means of a two-way tube is likewise recommended. Enemata and subcutaneous injections of salt solution are very useful. The treatment of nephritis as a post-operative affection differs only from that usually laid down in so far as it is modified by the wound and other conditions pertaining to the operation.

Pyelitis; Pyonephrosis.—Inflammation of the pelvis of the kidney and the conditions which result from it may follow operation and be due to various causes. It is, however, almost invariably seen, when occurring as a post-operative complication, in those cases where the kidney, ureter or bladder has been operated upon, accidently injured, is involved in inflammatory exudates, or as consecutive to cystitis. Cases of implantation of the ureters in the intestine are almost invariably followed by an ascending infection of the kidney. Ureteral fistulae emptying into the vagina or on the skin are apt sooner or later to lead to a pyelitis. In like manner there is considerable danger of the infection extending from a cystitis to the kidney along the ureter. Pyelitis following cystitis is usually bilateral. In cases of infection of the pelvis of the kidney the process is liable to extend by way of the tubules or lymphatics to the kidney substance causing acute suppurative nephritis. The latter condition may arise in the manner just indicated or it may be a part of an infection coming from other portions of the body through the blood or lymph channels. After operation upon the pelvic organs many conditions favorable to the development of a pyelitis may be present, namely: there may be pressure upon the ureter by exudates, ligatures, packs, or scar tissue in the bladder or along the course of the ureter causing a blocking of the ureter and a dilatation of the ureter and pelvis of the kidney; there may be suppuration in the immediate vicinity of the ureter; the vitality of the patient is lowered by the primary disease and the operation through which she has been, and cystitis is not infrequently present to act as a starting point for the infection.

The *symptoms* are as follows: (1) Pyuria. The urine contains pus and bacteria. When only one kidney is involved the amount of pus in the urine may vary, due to the temporary blocking of the ureter on the affected side. The bladder is usually involved and consequently there may be painful and frequent micturition. (2) *Fever* of an intermittent type associated with

chills is usually present. (3) *Pain* in the region of the kidney may be present and occasionally an attack resembling renal colic is seen. (4) The general condition of the patient indicates suppuration and, at times, loss of kidney function. (5) Physical examination may reveal tenderness over the kidney, and, at times, an enlargement of the organ. (6) Examination of the bladder and observation of the urine as it comes from the ureter or its collection by means of the ureteral catheter is quite feasible in most cases and is of the greatest value in the determination of the diagnosis, prognosis and treatment.

The *diagnosis* is of the utmost importance as it may save the patient from useless operative procedure, dosing for malaria, etc., and indicates at least some rational method of treatment. It is likewise very important to know if one or both kidneys are infected and the working value of each. This can be done by the use of the ureteral catheter in collecting the urine from the infected kidney, and in examining this urine and that from the bladder with regard to specific gravity, amount of pus, color, reaction and amount of urea. I will illustrate by an example: The specimen obtained from the ureter from which purulent urine was seen to flow is found to have a low specific gravity, considerable amount of albumin, much pus and very little urea. The bladder urine has a higher specific gravity, less pus and albumin and more urea. Now the inevitable conclusion must be that the other kidney is doing more work than the infected one. If in addition to this some urine can be collected from the supposedly healthy kidney without running any danger of infecting it, and this proves to be normal, the feasibility of removing or draining the infected kidney can be considered.

Hydronephrosis or dilatation of the pelvis and calyces of the kidney by the accumulation of non-purulent urine, may likewise occur as a post-operative complication. *Hydro-ureter* usually accompanies the post-operative variety of hydronephrosis.

The causes of post-operative hydronephrosis are conditions arising during or after operation which cause a blocking of the ureter. This blocking is usually not complete, as when no urine passes along the ureter atrophy of the kidney is said to result. The interference with the lumen of the ureter may be due to ligation or injury of the ureter; fixing the kidney in malposition; or twisting, kinking or compression of the ureter at the time of

operation. After operation, adhesions, exudates, scar tissue, tampons, and over distension of the bladder may act as causes of hydronephrosis. In many cases there is at first a hydronephrosis which later becomes infected, forming a pyonephrosis.

The *symptoms* of the affection are usually as follows: (1) Pain in the region of the kidney and along the course of the ureter. (2) Diminution for a short but varying period of time of the amount of urine passed. (3) The presence of a tumor in the region of the kidney which is usually tender. (4) Uraemic symptoms may be present.

The catheterization of the ureters will show whether or not the ureter is blocked.

The indications for *treatment* are to remove, if possible, the cause of the constriction of the ureter, and to supplement the work of the kidney by purgation, diaphoresis, etc. In a number of cases of post-operative hydronephrosis and pyonephrosis, nephrotomy or nephrectomy is indicated.

FISTULAE.—Fistulae following operations upon the urinary tract are of tolerably frequent occurrence and can be conveniently divided into renal and circumrenal, ureteral and vesical.

Renal and Circumrenal Fistulae.—Following nephrectomy, nephrotomy, nephropexy, and other operations upon the kidney a fistula may form. This may not communicate with the pelvis of the kidney nor with the urinary tract at any point, and in this case no urine escapes from the fistulous opening. Should the fistula lead down to the pelvis of the kidney or ureter, urine will generally be found to escape along the tract. Nephrotomy for hydronephrosis, calculus, suppurative nerphritis, or tuberculosis of the kidney is liable to be followed by a fistula which frequently does not heal until the kidney is removed.

Morris (Surgical Diseases of the Kidney and Ureter, Vol. I, p. 378) gives the following table to illustrate the frequency with which fistula follows operations on the kidney.

Nephrolithotomy	33 operations.	Fistula in 5 cases.
Nephrotomy for calculus .	32 operations.	Fistula in 10 cases.
Nephrectomy for calculus .	12 operations.	Fistula in 2 cases.
Nephrectomy for acute suppuration	1 operation.	Fistula in 0 cases.
Exploration of kidney . .	42 operations.	Fistula in 1 case.
Operations for nephropexy .	57 operations.	Fistula in 7 cases.

Operations for hydronephrosis and pyonephrosis . . .	16 operations.	Fistula in 2 cases.
Operations upon tuberculous kidneys	21 operations.	Fistula in 3 cases.
Operations upon tumors of kidneys	11 operations.	Fistula in 0 cases.
Operations for injury of kidneys	4 operations.	Fistula in 2 cases.
	229	32

Where a suppurative process is going on in the kidney; tuberculosis, either renal or circumrenal ; an obstruction to the passage of the urine along the ureter ; or foreign bodies, such as a calculus, or non-absorbable suture, are present, the tendency for the fistula to remain open is much greater than in other cases. In Morris' cases the majority finally closed.

Nearly all these fistulas open externally and very little difficulty is experienced in determining their nature. Rarely in nephrectomy there is an opening made into the duodenum or colon, and a fistulous tract leading into the gut may persist. A case occurred in the gynecological service of the Johns Hopkins Hospital in which two fistulae communicating with the duodenum followed the removal of a densely adherent kidney. Renal fistulae communicating with the stomach or other portions of the alimentary tract than the duodenum or colon or opening into the lung have been reported, but these were not post-operative in character.

Treatment.—After the formation of the fistula it should be kept clean by irrigations and frequent changing of the dressings. Injections of stimulating solutions, cauterization, etc., may be tried after the fistula has become chronic. If it shows no tendency to heal after several months, an operation, thoroughly exploring the fistulous tract should be done, and foreign bodies, as sutures and calculi, removed. In case one kidney is tuberculous or otherwise badly diseased and the other is healthy, a nephrectomy is advisable. If the persistency of the fistula is due to the blocking of the ureter by a calculus or stricture or other cause this should be remedied by operative procedure, and where tuberculosis of the ureter is the cause of the persistency of the fistula, ureterectomy is advisable.

Ureteral Fistulae.—Post-operative ureteral fistulae are generally due to traumatism of the ureter during operation; or to sloughing of this structure produced by interference with its blood supply in the extensive dissections now practiced in operations for carcinoma of the cervix, or by pressure of clamps, drainage tubes, ligatures, etc. The point where the injury to the ureter occurs being in by far the greatest number of cases in the pelvis we commonly see uretero-vaginal fistulae. The fistula may, however, open into the abdominal wound, the bladder, or into the intestine. In case no provision is made for the escape of the urine externally at the time of operation, it finds its way into the peritoneal cavity or infiltrates the tissues of the pelvis or abdominal walls. Where the urine escapes through the vagina or along the drainage tract in the abdominal wound the diagnosis of urinary fistula is self-evident.

The occurrence of a ureteral fistula where there is free escape of urine does not, as a rule, interfere to a marked extent with the recovery of the patient from the primary operation. Death is the usual result when there is infiltration of the tissue with urine or an escape of it into the general peritoneal cavity.

The indication for *immediate treatment* is to provide for a free escape of the urine and by frequent cleansing, douching and irrigation to keep the wound and surrounding tissue from becoming foul and irritated.

Dr. Vaughan said that the paper was of great interest to all surgeons. It is of the utmost importance to prevent such complications and to recognize the nature of them when they occur. He would urge that the best treatment for renal infection is incision of the kidney, with drainage. Ureter washing may be of benefit, but he doubts its efficacy when pus is present in the urine in any considerable quantity. In any case, drainage of the kidney is better than extirpation, until all hope of saving the kidney is lost.

He reported a case of pyuria, following cystitis antedated by gonorrhea. When the patient came under Dr. Vaughan's care, the urine had contained pus for four years; the symptoms were those of left pyonephrosis. The kidney was incised and found to contain pus and gravel; the ureter was dilated and contained a calculus near the bladder. The kidney was removed and the stump of the ureter allowed to remain. Pyuria persisted after the operation, and the right kidney was incised and drained. The patient recovered and almost all the pus disappeared from the

urine; but after two years a little pus may still be detected. Whether it comes from the bladder or from the stump of the left ureter, he is unable to say.

He commented on the extreme importance of care in avoiding the ureters in pelvic surgery.

Dr. I. S. Stone said that it was impossible to criticize Dr. Miller's paper. The special importance of examining the urine before operations has long been recognized by all surgeons; but in recent years the presence of epithelium or casts or a little albumin in the urine is not regarded as a contraindication for operation. This statement, of course, does not invalidate Dr. Miller's position; septic infection of the kidneys should always contraindicate surgical procedures, unless directed to the cure of the kidney lesion itself.

Chloroform does not produce as much albuminuria as ether; but nephritis is very seldom found as a result of either anesthetic. Notwithstanding the greater frequency of albuminuria after ether, in view of its greater safety he prefers it for anesthesia. Of course, all operators are familiar with the appearance of casts in the urine after operations.

In regard to operative accidents to the urinary tract, they occur when least expected, but the fact remains that they do occur. He recalled one case in which he cut the ureter, after sixteen years' experience in abdominal surgery. Overconfidence is one of the dangers of experience. He had had a case of retroperitoneal sarcoma in which the ureter leaked after operation; whether the fistula was due to incision of the ureter or to necrosis from pressure he does not know. The patient lived long enough for the fistula to close, and may be living yet. Spontaneous closure may be due to atrophy of the kidney and lessened pressure upon the ureter. He appreciated the value of the suggestions offered in the paper and the importance of thorough examination of the urinary tract.

Dr. Miller thanked the speakers for their remarks. He had originally intended to include in the paper all the post-operative accidents of the urinary tract, but the bulk of material made it necessary to speak only of injuries to the kidneys and ureters.

CASE OF TYPHOID FEVER; PERFORATION, OPERATION, RECOVERY.*

By C. S. WHITE, M. D.,

Washington, D. C.

The following case of typhoid fever with perforation possesses some unusual symptoms and seems worthy of reporting.

E. D., male, colored, single, 28 years old, porter. Little is known of the antecedents and causes of deaths of his family. He was born in Washington, D. C., and has resided here all his life; had none of the usual diseases of childhood. Eight years ago had gonorrhea and made a good recovery. Was stabbed in the chest three years ago and promptly recovered. In the winter of 1905 he attempted suicide by drowning, but was rescued and removed to a hospital where he remained one day. He uses alcoholic beverages daily in moderation, but occasionally is intoxicated.

He is unable to fix the exact date of the beginning of his present illness, it being insidious in its onset, but between September 12 and 18, 1906, he complained of lassitude, anorexia, pains in the back and abdomen, and constipation. The symptoms persisted but he continued at his work. September 25, he took Epsom salt and six grains of quinia sulphate. At 3 A. M., next day, while at stool, he was seized with severe pain in the lower abdomen, attended with collapse, and was brought to the Emergency Hospital in an ambulance.

Examination at 9 A. M.—Had pain, referred to the umbilicus; was conscious; tongue coated and red about the edges; no vomiting; abdomen tympanitic; greatest tenderness over right lower quadrant, but without maximum intensity at McBurney's point; moderate muscular rigidity; legs and thighs were kept flexed; expression atypical; temperature at 10 A. M. was 101, pulse 68, respiration 20. Diagnosis, appendicitis.

Operation at 11.30 A. M.—The gridiron incision was made. When the peritoneum was opened, a large quantity of yellow sero-purulent exudate gushed out. The appendix was normal with the exception of distended bloodvessels. Small pieces of plastic lymph were attached about the ileum, indicating the seat

*Reported to the Medical Society, November 7, 1906.

of the lesion. The incision was enlarged, the gut brought to the surface and the perforation found about six inches from the cecum opposite the mesentery. The opening was, approximately, two-thirds of an inch in the long axis of the intestine and one-third of an inch transversely. It was closed with two tiers of Lembert sutures. Eight inches from the cecum a small inflamed area was visible, indurated about the circumference, but very thin in the center. This was believed to be a second ulcer. It was folded in and sutured. No other suspicious spots were seen. The peritoneal cavity was irrigated with salt solution. Two rubber drainage tubes were inserted and the abdomen closed. The patient was kept in the Fowler position three or four days. The drainage was profuse from the second to the sixth day, the abdominal wall, which became infected, furnishing most of the pus. One tube was removed on the fifth day, the other on the ninth. The wound healed well and a hernia did not follow. His highest temperature was reached on the third day, 102.4 being recorded. Normal temperature present after the sixth day.

Rose spots were never seen and the Widal reaction was absent on the sixth and twenty-fifth day after operation. Several careful examinations of the respiratory and digestive systems revealed no pathological condition. A blood count was made October 21, and gave 4,300,000 red, 8,800 white, hemaglobin 100.

The features deserving of mention in this case aside from the successful termination, are the early onset, *i. e.*, in the first week of illness, absence of Widal reaction, absence of rose spots, and atypical temperature curve. It may be well to mention that in two per cent. of enteric fever cases operated upon, perforation occurred in the first week; perforation is also frequently present in the ambulatory type, and a negative Widal reaction occurs in at least five per cent. of all cases. I have no hesitancy in pronouncing this case one of typhoid fever with perforation.

Dr. Lochboehler said that Dr. White had read a short paper but one of great interest. Dr. Lochboehler had had occasion to look up the statistics of operation for typhoid perforation, and referred to Dr. Keen's table of 200 cases, and Haggard's analysis of all the recorded cases. Many successful cases have been reported. What are the local surgeons doing? He had never heard of a successful case in the District of Columbia. He had some years ago referred a case of perforation to a surgeon who

refused to operate because the patient could not be removed to a hospital. The patient afterward got well spontaneously. There was no question in his mind as to the correctness of the diagnosis of perforation. He felt that the surgeons place the internist in a very bad position, by requiring always hospital conveniences, and insisting always upon blood counts and other diagnostic refinements before consenting to interfere.

Dr. Claytor said that he had had four cases of perforation in his own practice and had seen one other in consultation and one was not ; four were operated upon, all died.

Dr. E. B. Behrend said that he had recently seen two cases. One, a child, 10 years of of age, had three perforations ; the other, a man, had one. Both were operated upon and both recovered. They both belong in Dr. Vaughan's series, who now has 40 per cent. of recoveries to his credit.

Dr. Sterling Ruffin said that of three cases of perforation in his hands all were operated upon and all died. The laparotomy in each case was done too late. After the lapse of a few hours, infective material is scattered throughout the abdominal cavity, general peritonitis quickly appears, and then, of course, hope is gone. The difficulty lies in the necessarily frequent late positive recognition of the accident. He believes that many lives may be saved by operating upon suspicion of perforation ; there is not much jeopardy to life in laparotomy, and we know that if twelve hours are allowed to elapse without interference, the accident will almost invariably prove fatal.

Dr. I. S. Stone had seen in consultation two cases of typhoid perforation. The first was in the hands of a very capable man, and Dr. Stone had seen the patient just after the perforation occurred. He was called in again when the patient was nearly dead. The physician was not able to obtain consent for an operation, so no one was to blame for the result.

The second patient was pulseless when first seen by him ; he operated under cocaine, although there was no hope of success. There were good reasons for undertaking the operation, in spite of the hopelessness of the situation.

Dr. Lochboehler's case was the most important one mentioned, in that the patient recovered without operation. As such a result is so extremely rare and unexpected, Dr. Stone would like to know the details of the case.

Dr. Lochboehler said that the patient had been indeed fortunate. He had recognized the accident, and had promptly called a surgeon, who refused to operate. The patient was about pulseless, in coma, with a temperature of 105, and greatly distended abdomen. She afterward had hemorrhages, but in spite of all these serious conditions recovered. He believes that some cases of perforation do recover, and this was one of them.

Dr. S. S. Adams said that it was unfortunate that the discussion

had taken the turn of recrimination of the physician against the surgeon. We know that the gentleman indicated is a skillful, conscientious surgeon, and Dr. Adams felt sure that if the surgeon would not operate upon Dr. Lochboehler's patient at home, conditions were such that he would not have operated at a hospital. As regards the diagnosis in this case, subsequent hemorrhage did not by any means indicate perforation. As for himself, if one of his patients showed signs of perforation and recovered without operation, he would conclude that no perforation had occurred. Dr. Lochboehler was unfortunate in not hearing Dr. Vaughan's paper on perforation with operation, with a very creditable proportion of recoveries. The surgeon who had been mentioned should be present to reply to this probably unintentional criticism. Dr. Adams believes that the Washington surgeons are always ready to operate when and where they believe it to be their duty to operate.

Dr. Vaughan wished to congratulate Dr. White upon his successful case. Some might doubt the diagnosis in this instance; he did not. The first successful case of laparotomy for typhoid perforation was that of the late lamented von Mikulicz, and it was very similar to that reported by Dr. White—an ambulant case. The patient was up and about, had just eaten a hearty meal when he was taken ill; von Mikulicz watched him for 72 hours, then on opening the abdomen, the perforation was found and closed. The patient got well. A paper by Hart and Ashhurst in *Transactions of the American Surgical Association* for 1903 gives a table of 362 cases with a mortality of 75 per cent. He felt somewhat chagrined that after all the trouble he had taken to report his cases Dr. Lochboehler had never heard of his ten cases with four recoveries, all in this city.

Dr. White, in closing the discussion, said that at least one case of typhoid perforation has recovered spontaneously; it was discovered after death from some other disease; the omentum had become adherent over the perforation, and had saved the patient's life. The value of surgical intervention is indicated by the fact that a very large percentage of the typhoid mortality is due to perforation: if from 30 per cent. to 40 per cent. of these may be saved by laparotomy, the total typhoid death rate will be very materially reduced.

A PARTIAL REVIEW OF INTERNAL MEDICINE.*

By C. NORMAN HOWARD, M. D.,

Washington, D. C.

When the field of internal medicine is so alive with facts, when they are coming upon us from all parts of the world, when each investigator is throwing his quota into the arena and going back for more, it is indeed a complex mass from which the physician is to choose in the actual treatment of the sick.

There will be no attempt to even itemize this wealth of material in a short paper, for it would at best degenerate into simply not only an index but an incomplete index.

It is more important that there may be brought before the Society for discussion the trend of medicine along certain lines.

The first of these to be noted is the changing attitude of the profession toward germ diseases. It will be remembered that micro-organisms were first noticed in 1632, their probable relation to disease pointed out in 1762, and the theory subsequently enlarged upon by many men for many years. Finally, a physicist, a biologist and a physician (working each in his chosen sphere) made the germ theory of disease so plain that the medical profession has adopted it almost without question and been guided by it for the last twenty-five years.

The desire to indiscriminately kill the germs gradually subsided as increasing knowledge showed the fruitlessness of such attempts, and still broader knowledge proved that the vast majority of them are not our enemies; while a multitude even render service to us, the most striking being that of reducing organic matter to carbonic acid, ammonia and water. They are thus at the same time rendering even a greater blessing to the vegetable kingdom. Whether this dead organic matter lies sprawling on the face of the earth or is borne up by the waters of the river, sea or pool, or floats as effluvia in the air, these saprophytes do their work as the scavengers of the world.

With the above knowledge we more calmly now face the fact that our body is covered with germs—the *staphylococcus epidermidis albus* being, for instance, practically a constant inhabitant. There are so many germs and so well lodged that it is claimed by

*Read before the Medical Society, November 21, 1906.

many that the hands can never be made absolutely sterile. When we further consider that there are on the average about 2,400,000 openings, each one many times the size of a micro-organism, leading down from the surface of the body into the sweat glands (not to mention the sebaceous ducts), it is perhaps not unreasonable to suppose that these minute bodies can gain entrance to the blood. In addition to these are the ones accompanying the food. Milk alone, for example, is considered pure if it has but 10,000 bacteria to the cubic centimeter. When we take a glass of good, pure, wholesome milk we get about 3,000,000 germs, and if it is not procured with strict cleanliness we get about ten times as many. When they are well into the body they find other germs there, such as the colon bacillus, with a squatter's claim to the intestines. There are an abundance of micro-organisms in the mouths of the healthy. In fact the total number is so great and at least one of the varieties so constant that the finding of the *streptococcus brevis*[1] is considered almost as delicate a test for saliva as the finding of the colon bacillus is for the presence of fecal matter.

It has gradually dawned upon the profession that there is decidedly something more necessary than the mere presence of the germs in order that they shall produce disease. It is conclusively shown that this must be the case when we find the germs of specific diseases such as the diphtheria bacillus, the bacillus of influenza and the pneumococcus in the mouths of healthy persons.

War against the disease-producing germs has not subsided, but of late we have laid more stress on strengthening the fortress than on attacking the enemy.

Sixteen years ago Behring wrote of serum therapy. We know now how through the application of this principle the mortality from diphtheria has been cut at least in half. The same principle has been applied in the treatment of tetanus, hay fever, pneumonia, scarlet fever, streptococcic infection, tuberculosis, typhoid fever and poisoning from snakes. The underlying theory, as we all know, is to give specific reinforcements to the antitoxins of our own blood.

None other of the sera has attained the high efficiency of that used in diphtheria.

Antitetanic serum seems to be now regarded as of decided value in prophylactic treatment.

The treatment of hay fever by the Dunbar "Pollantin" has been only partially successful.

The serum for pneumonia has not made many friends, although some few men have advised it.

The Germans have been using a serum for scarlet fever, but with indifferent results.

Erysipelas has been beneficially treated by injections of anti-streptococcus serum; and favorable reports have been made upon the giving of this serum early in the treatment when a general streptococcic infection is feared.

Tuberculosis sera are being praised in some quarters, but there has been no general adoption of them.

Antityphoid serum has not received very much attention in this country; but in Paris, Chantemesse has had fairly good success with it, keeping his mortality down to 4 per cent. in a series of 765 cases, while the lowest typhoid mortality at other Parisian hospitals during the same time was 12.8 per cent.

Calmette has produced a serum which is of value in the treatment of cobra poisoning.

Noguchi has brought forward an experimental anticrotalus serum which has remarkably good effects when given to animals poisoned by rattlesnakes. Crotalus, it might be mentioned in passing, is the name given to a genus of poisonous snakes, including the rattlesnakes.

All the sera are seen to the best advantage when given so early that they practically act as prophylactics.

The entire object of the sera is to give aid to our natural forces—not as a shotgun tonic, not as a heart stimulant, but by actually supplying that which is needed.

A further step in the same direction has lately been advocated by Sir Almroth E. Wright, in which the blood is induced, through vaccines, to produce an increased quantity of antitoxic substances with which to combat infection. Dr. Wright has recently told us of his interesting work in some detail. By this method we become self-creative of the things we need, instead of borrowing from animals.

It would seem, then, that the production of antitoxic substances within our own body was a most happy and rational outlook along the lines of treatment of bacterial diseases.

However, because means have been devised for strengthening

the fortress, that does not mean an invitation to the germs of disease to increase without hindrance, for we have still the same obligations to fulfill in keeping down, as far as possible, through private and health-office methods, the spread and growth of the enemy.

In organotherapy we see again the effort to supply the body with its own essential elements; an effort to give directly the things which are lacking, the lack of which has brought normal tissues into the realm of pathology.

Claude Bernard, poet and French physiologist, first advanced the idea of internal secretions. His contemporary, Brown-Séquard, who outlived Bernard by sixteen years, dying but twelve years ago, forced the theory upon the medical mind through his work upon the extract of the testes. Brown-Séquard believed that these organs have an internal secretion which acts as a physiological tonic. Further experiments have partially but not definitely established his belief beyond question.

Since he began his work other organs have been under experimentation, with the result that to-day the thyroid gland is considered a specific in the treatment of myxedema and cretinism.

The use of the suprarenal bodies in Addison's disease has not met with the same success. It has a greater reputation through its internal secretion being able to locally constrict bloodvessels, and, when given systemically, to raise blood pressure.

There is believed to be an internal secretion of the kidney itself with a vaso-motor function.

The enzymes in the external secretion of the pancreas have been administered foı some time as an aid to digestion—another instance of supplying an actual bodily deficiency. Lately, however, an extract has been made of the entire organ, with a view to giving in medication not only its enzymes, but also utilizing an internal secretion, which was first brought to the attention of the medical world in 1889 by vonMehring and Minkowski; its function is the regulation of the consumption of sugar in the body.

The internal secretion of the pituitary body is in some respects similar to that of the suprarenal bodies.

Those who have seen the distressing mental and physical symptoms which have come upon the women who have sustained a double oophorectomy, must surely have wondered whether in

taking away the ovaries the body is not deprived of more than the ability to reproduce. It is a significant fact that some of these patients have been relieved through the administration of ovarian extract. It is the belief of Loewy and Richter, in view of experiments they have made upon dogs, that the ovaries contain a specific substance, and that the loss of this substance decreases the consumption of oxygen by the body. This power of the ovaries it has been thought may be accountable for the good effects occasionally produced by their removal in osteomalacia. It may also explain the gain in weight which frequently follows premature menopause.

There is another matter in regard to which I am anxious to profit by a full discussion, and that is whether there is not a tendency now to allot a more definite place to laboratory findings in diagnosis and treatment—a place not quite so exalted as perhaps, say, four or five years ago. It would seem that there is a healthy, growing tendency toward a middle course wherein the patient is regarded not quite so much from the sympathetic side, on the one hand, nor, again, not quite so much as a machine, on the other. We seem, in other words, to be looking more on the whole picture.

We do not simply look to the east and see the dark clouds of disease and death through the window of some one laboratory finding; nor, again, to the west and see nothing but the bright sunshine of rugged health through the window of our general impressions. But we go out on the roof and see all there is to be seen, and thus can judge the better of what will happen by the close of the day.

A few years ago it would have seemed that a patient was composed of blood, pus, urine, sputum and gastric contents—all wrapped around with a temperature chart. It seemed to be overlooked, in the enthusiasm of more exact findings, that before this mass of material became ill he was an ordinary human being, having his joys and his sorrows, his faults and his strength, his trials and his pleasures—even as you and I.

This good tendency of men to sum up a case, to form conclusions from the whole, instead of making guesses from a part, has naturally led us into an attitude (as to the correctness of which I believe there can be no doubt) which is hard for the student to

learn, and difficult for the laity to understand, and that is that there is scarcely any single symptom which is absolutely pathognomonic of any one disease.

Another matter to be briefly brought to your attention is the increasing use of physical methods in treatment. Hydrotherapy has an established place. We have long known the general influence for good of fresh air and sunlight, but during the last few years it has been especially emphasized in the treatment of tuberculosis. More recently Dr. W. P. Northrup[2] has called attention to the benefits of open-air and even roof treatment of pneumonia, which he has carried out in the Presbyterian Hospital of New York. These, it would seem, must be but an earnest of other diseases to be treated along similar lines. I put it forth as a mild suggestion that in a few years the majority of diseases will be treated practically out of doors, with marked benefit.

The x-ray and radium are both fairly recent helps in the treatment of disease. While I say "fairly recent" I cannot help but believe that there exists in the solar radiations a ray similar to the x-ray, but not occurring with such concentrated intensity as when artificially produced. My authority and my own reasons for this I cited during a discussion before this Society on May 9, of this year, and will not burden you with a repetition.

The ultra-violet light, the mechanical vibrators and the high-frequency current are being used in selected cases.

None of the artificial physical treatments has shown itself to be a panacea.

Another advance, and it is a splendid one, is the saner outlook in the giving of drugs. The time is slowly passing away in which acetanilid, soda bicarbonate and caffein can be thrown together by different firms and successfully presented to the profession as a new drug—the new name varying with the philologistic knowledge of the manufacturer.

This and other combinations of old friends masquerading under queer titles, have been uncovered by the magnificent work of the Council on Pharmacy and Chemistry of the American Medical Association. More will undoubtedly be exposed by the same source and from the operation of the Pure Food Law, which goes into effect on the first of the coming January.

The drug portion of the Pure Food Law will hit the 6,000, and more, so-called "patent medicines" advertised to the laity, as well as those advertised to the profession. The law states in part:

"* * * * for the purposes of this Act an article shall also be deemed to be misbranded:

"In case of drugs:

"First. If it be an imitation of or offered for sale under the name of another article.

"Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha- or beta- eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein."

There is undoubtedly a delicious atmosphere of uncertainty about a new drug; a feeling of hope that it may conquer ills as yet untouched; and it is in this spirit, I believe, that many men have prescribed new medicines about which they had but the biased words of a printed circular.

The same spirit of the times, however, which has prompted the snatching down from false positions of men high in the business world, the demand for common honesty as a political slogan, and the clearing away of the trappings and the things that are false, seems to have entered the medical world in a demand by the profession to know just what and how much they are giving when they order medication for the sick.

A clear picture of the mental field over which medical thought has moved in its journey down to the present would be one of the most cherished possessions of the medical profession. It is this to which I would call your attention in closing.

Such a picture would show not only what has been discovered, but how often it has been discovered. Yes, we have our medical histories, but they deal largely with isolated facts coupled with the strange names of the dead. They serve their purpose as histories. Historians respect chronology, as good historians should, and their facts are so arranged. But if some strong man could

take all of these facts that come to us out of the centuries past and classify them according to what they *mean*, uninfluenced by time or by what they were called, I think we probably would be surprised to find how often, how very often, we had camped exultantly on new ground, upon which the campfires of a former generation had long since died away.

Let me cite, for example, an instance which comes to our own doors, and an instance, too, in which there was no obscuring of the field by applying a different name to the same fundamental theory.

Dr. Josiah Nott, of Mobile, Ala., believed in the mosquito as the probable cause of malaria and yellow fever away back in 1848, and said so.

By and by, in 1881, Dr. Carlos J. Finlay, of Havana, believed that yellow fever was transmitted by the mosquito.

Dr. A. F. A. King brought forth his belief in the connection between the mosquito and malaria in 1883. After the lapse of other years, and then through the work of many, but especially of Ronald Ross in India, in 1897, the anopheles was held directly accountable for the transmission of malaria by injecting the parasite into the blood.

In 1900 it was proved by Reed, Carroll, Lazear and Agramonte that yellow fever is conveyed through the bite of the stegomyia fasciata, thereby liberating a whole country from a time-honored curse.

While we are familiar with this particular history of the final proving of two theories half a century old, are there not others which were laboriously worked out by brilliant men, as far as older or ancient methods would permit; and if we but knew, ere we wandered away from a new belief, that years before it had been welcomed as a pristine spot, might we not stay longer, trying to determine what lodestone of truth it was which brought us and others (with the years between and by different paths) to the same place?

Perhaps the following is still another instance. A little over a month ago we sat in this hall listening to Sir Almroth E. Wright, of England; the subject of his lecture being "Principles of the Treatment of Bacterial Diseases by the Inoculation of Corresponding Vaccines." The hall was crowded with the best of our profession, the gallery was peopled with medical students—all in-

terested in the unfolding of a new doctrine. On the 3d of this month our medical journal of national authority editorially rose to the value of his work, saying: "* * * the message which Dr. Wright brings to the medical profession is comparable in its practical importance to that of Pasteur, of Koch and of Behring."

And yet, if you will go back with me through a hundred years of time, we come upon the birth of a name—Isopathy. I chanced upon its history, and it is truly not regarded flatteringly by its historian, Roswell Park,[3] who says of it:

"An offshoot of homeopathy, which demands only the harshest criticism, is Isopathy—perhaps the filthiest theory ever invented—according to which like is to be cured by like, and to such an extent that smallpox is to be treated by variolous pus, tapeworm by the ingestion of the proglottides, etc."

Dr. Wright spoke of treating pulmonary tuberculosis, furunculosis and acne by giving to the patients the respective germs which cause these diseases. These etiological bacteria are found in the products of the diseases. Does not the account just given of Isopathy expressly provide for the treatment of disease by its products? Are not the bacteria the virile portion of the products? Because they are now first killed before being given as medicine, does that constitute a fundamental difference in the tenets of our new doctrine of today and the new doctrine of a hundred years ago? I think not.

I grant that it has been wonderfully altered by the application of the greater knowledge we now have of ourselves and of germ life. That very fact, however, brings the question flatly before us, whether, by virtue of that increased knowledge, there are not other gems—rough, crude, uncut and vilified—which could be found in the ashes of yesterday and placed with the jewels in the crown of today.

[1]Dr. M. H. Gordon, "Annual Report of the Medical Officer of the Local Government Board of England," 1902–03.

[2]*Jour. Amer. Med. Assn.*, Oct. 13, 1906.

[3]"An Epitome of the History of Medicine."

Dr. Sterling Ruffin wished to congratulate Dr. Howard upon the great interest and literary merit of his paper. The field covered by the essay was so wide that it was impossible to discuss it in detail. Dr. Howard had referred to the very wide dissemination of bacteria and their relations to life, disease and death. The more we study the nature of morbid processes, the more often we find that bacteria are at fault; more and more diseases are falling into the class of infections; and, indeed, we find that many of the non-bacterial diseases do not often cause death of themselves, but by the derangement of bodily functions occasioned by them, the resistance of the victim is so lowered that he succumbs finally to some terminal infection.

With regard to the studies in serum therapy, very interesting and partially successful work is being done in the serum treatment of exophthalmic goitre. We do not yet know positively what function the thyroid gland performs; the elaboration of some internal secretion, no doubt, but probably (according to a late theory) an internal secretion for the purpose of counteracting the influence of a natural (metabolic) toxin. The problem necessary to be solved, then, is to increase this natural toxin to counteract in turn the abnormally large output of thyroid secretion in exophthalmic goitre. The serum of thyroidectomized animals has been used with disappointing results; the method is unscientific and inaccurate. Beebe and Rogers, however, produce a serum—a cytolysin—by inoculating animals with extract of human thyroid glands, *i. e.*, glands from exophthalmic goitre patients. Their object in using this cytolysin is to cause atrophy of the thyroid gland. We know that from animals inoculated with kidney substance or liver substance of another animal, nephrotoxin or hepatotoxin, respectively, may be obtained. These toxins when inoculated produce a specific destructive effect upon the kidney or liver, and upon no other organ. Beebe and Rogers are trying to effect the same phenomena with the thyroid gland. They have reported some excellent results, and have cured some cases; the qualification must be made that in some cases the method has absolutely failed. He has recently had the opportunity to try this serum upon an exophthalmic goitre patient, whose alarming symptoms made some radical measure necessary, but unfortunately no benefit was derived from it. One negative result, as has been shown, should not discredit the serum.

Sir Almroth Wright's recent address in this city upon the Opsonic Index and his experiments with homologous vaccination, were of the intensest interest, and all who heard him were edified. His work is of great value and must of necessity be productive of good. The idea is an old one; Jenner was doing the same thing although he did not know it; the treatment of rabies uses the same principle. Sir Almroth's theories to Dr. Ruffin, however, are not free from contradictions, and he believes that

the method is going to be adapted to the prevention, rather than to the cure of disease. It will be, and is, curative in those chronic infections like localized tubercle, acne, furunculosis, etc. In the acute infections where the patient is already struggling with dangerous amounts of toxins, the inoculations seem too much like adding fuel to the fire.

Dr. Briggs said that the introduction of the subject of Sir Almroth Wright's work gave him the opportunity of speaking upon a theme of the greatest interest to him.

The inoculation of the same toxin into an organism already dangerously intoxicated would seem to be based upon untenable grounds unless one point, established by Wright's work, and of vital importance, be understood: Wright holds that opsonins are born locally, not generally. This conception of the local formation of opsonins from local inoculations has been proven by cases. Dr. Briggs recalled one case of localized tubercle which, in spite of repeated tuberculin inoculations, did not improve. The idea occurred to Wright that if the inoculation were given in the lymphatic area above the site of the tuberculous deposit, the resultant opsonins would be drained directly through the lesion. Acting upon this idea, a cure was speedily effected. The local birth of opsonins is of vital importance as applied to vaccination for acute infections.

Dr. S. S. Adams had only a few words to add. Of course, all physicians are interested in the various sera; but the weak point is that they are prepared by manufacturers and by them are exploited in the market. He is always extremely cautious to know by whom sera are manufactured and under what auspices. There is at present too much of the mercantile and not enough of the scientific spirit about the sera in general use at this day.

With regard to Wright's work, Dr. Adams is glad to know that experiments of this sort are now being conducted here by Dr. Behrend. As for himself, he felt, while listening to Sir Almroth's address here, that there was too much not proven; there were too many unaccountable things. As far as his cases of septic endocarditis were concerned, Dr. Adams could show as many charts with as many unaccountable features. But he believes that the day is coming when the sera will attain a place beyond value. The possibility of finding a serum for the cure of exophthalmic goitre is encouraging. He was very glad to have heard Dr. Howard's paper, and found the accounts of the ancient origin of many supposedly new practices very interesting.

Dr. Briggs asked leave to say a few words to correct the impression that nothing had been proven, that no results had been attained by Wright's work. He himself had had the privilege of working in Wright's laboratory for five weeks last summer. Three days out of every week were clinic days, and very many patients came for treatment and examination. He recalled one clinic which

they called their red letter day; 106 bloods were examined and tested. Most of these cases were suffering from localized tubercle, and they were all getting well; further than that, for the past three years, every case of local tubercle coming to the laboratory for treatment had been cured.

Dr. Macatee said that with regard to Beebe and Rogers' serum for exophthalmic goitre, these investigators have found that the best results are obtained by excising a portion of the thyroid from each case, and, by using it for inoculation, thus make a serum specific for that particular case. Perhaps if Dr. Ruffin's patient could have been treated in this manner, some beneficial results might have been observed.

Dr. E. L. Morgan called attention to the fact that many things thought to be new are not, and also that there are many instances in the past of the use of remedies that were prepared from persons afflicted with the disease for which the remedies were used. He mentioned also some instances which were suggestive of the same idea, as the giving of tigers' flesh to elephants, in India, to make them courageous; the giving of owls' eyes to an animal to enable it to see better at night; lions' flesh to cowards, in Morocco, to make them brave; hyena brains to make stupid; camels' meat to make revengeful. The notorious Matuana killed thirty chiefs and drank their bile to make him brave. Human blood is drunk to give courage. It is said that during the Taeping rebellion the Chinese ate the hearts of the rebels to make themselves brave.

Vaccination was described by Dhawantari, the Hindoo Aesculapius. Inoculation for the smallpox is well known; it was in vogue in India and was introduced from China into Turkey. It is claimed that Sulzer vaccinated persons in Europe as early as 1713; Sutton and Fewster in 1765; Benjamin Jesty in 1774; Jenner did not publish his results till 1798. Vaccination was known in South America in 1802.

The Chinese have long practiced powdering variola crusts and blowing the powder into the nostrils to inoculate the disease; they called this "cultivating Heaven's flowers."

The use of rays of light in treating disease is not new. The Chinese and Japanese line the rooms of those sick with smallpox with red cloth, and Gadsden of Merton College, Oxford, in the case of the son of Edward II of England, sick with smallpox, used red hangings in the room. We had the blue glass craze in the early 70's; now comes the x-ray, radium and other rays. It may be remarked that the red color was an element in religious mysticism.

Some of us remember the paper read some years ago by Dr. Reyburn on Homeopathy, in which he described the use of pus from gonorrheal cases to cure the disease. It is claimed that diphtheria antitoxin has been used successfully by the mouth.

In old times women ate frogs because they lay many eggs, and the theory was that using these animals as food favored having children.

It may be added that obstetrical forceps were used as early as 79 A. D. ; that ligation of arteries was advocated by Galen and many others before the time of Parè in the 16th century, to whom the credit is given. Intrauterine injections were given by Hippocrates ; Polybius even attempted artificial extrauterine development.

Dr. Howard thanked the speakers for their remarks. He was glad that Dr. Ruffin had spoken of the serum for exophthalmic goitre, as it is a most interesting work although no decided results have as yet been obtained. Dr. Howard appreciated the reception of his remarks upon the old ideas come to us under new names, and believed that many old doctrines, discarded through lack of ability to prove them by older methods, may be rejuvenated through the helpful influence of the greater knowledge now possessed by the medical profession.

A colored girl of Steubenville, O., aged eleven years and eight months, gave birth to a male babe at full term on September 19th, and is therefore one of the youngest mothers on record. The little girl was taken ill while testifying as a witness before the grand jury ; she was removed to her home and in a few hours became a mother. The little mother and child are doing well.—*Ohio State Medical Journal.*

FRIEDREICH'S DISEASE. REPORT OF A CASE; WITH A CLINICAL DIGEST OF ONE HUNDRED CASES.*

By WILLIAM LITTLETON ROBINS, M. D.,

Washington, D. C.

Having failed to find any record of a case of Friedreich's Disease, otherwise known as Friedreich's Ataxia or Family Ataxia, ever having been reported to this Society, and knowing that several of our members have seen the case which is the subject of my study, it occurred to me that a report of this case with a partial clinical digest of one hundred cases might be of interest.

As long ago as 1861 and 1863 Friedreich, of Heidelberg, under the title of "Hereditary Ataxy," described several cases of this disease in the children of two families. No isolated cases were found by him. His general description of the disease, as given by Ormerod, was as follows: "There exists a chronic inflammatory degeneration of the spinal cord leading to atrophy; which develops chiefly at the period of puberty under the influence of hereditary predisposition; which is essentially limited to the posterior columns of the cord, begins in the lumbar region, spreads from thence upwards and downwards, and finds its limit in the medulla oblongata, after involving the trunks and nuclei of the hypoglossal nerves. The clinical characters of the disease are impairment in the coordination and harmony of movements, developing gradually and spreading from the lower to the upper half of the body, and always involving finally the organs of speech; sensibility and the functions of the special senses and of the brain being intact. Paralysis of the sphincters and trophic disturbances are absent. Less constant phenomena are curvature of the spine, sensations of vertigo and nystagmus. From a clinical point of view we must regard the disease as a progressive paralysis of the faculty of the combination of movements; from the point of view of pathological anatomy, as a chronic degenerative atrophy of the posterior columns of the cord."

In 1882 Brousse ventured to give this disease the name of its discoverer, and since that time it has been known as "Friedreich's Disease" or "Friedreich's Ataxia."

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*Read before the Medical Society, November 21, 1906.

My case is that of a male, G. H., aged 13, elder of two children. He had whooping cough and cholera infantum at 9 months, after which he was apparently perfectly well until the age of 5, when he had an illness which lasted about ten days, during which time he had severe vomiting spells and cried out with pains in his head. When he had recovered sufficiently to leave his bed, his mother noticed for the first time "something wrong with his walking, which increased gradually but so slightly that little notice was taken of it until a year after the illness, when an unevenness of gait was apparent. About this time he had terrible screaming spells at night and repeated severe attacks of headache. At 8 years he began to stagger badly and since that time he has gradually grown worse."

Family History.—Father is rheumatic. Mother, who was born in Scotland, is very nervous but otherwise healthy. Mother's mother, who died of asthma at 63, was an alcoholic for many years. No history of ataxia in any form in parents or grandparents, uncles or aunts. His younger brother, 10½ years of age, has now loss of patellar tendon reflexes, but apparently no other signs of this disease. One year ago this brother was very nervous and restless, and his patellar reflexes were exaggerated.

Present Condition.—His intelligence is probably as good as that of the average boy of his age and advantages. His school reports show him to be very good in geography, spelling and grammar, but poor in arithmetic and writing. The facial expression is very peculiar. The eyelids are opened wide with difficulty on account of the presence of a partial ptosis. The eyes appear dreamy and heavy. There is drooping of the corners of the mouth, and the upper lip overhangs the lower. Collins has well described this expression of the face as follows: Lack of mobility or action on emotional display or on voluntary effort, such as talking. He frequently knits his brow. There is some fibrillary movement of the tongue. Titubation is well marked. Romberg's sign is probably present, but slight. The pupils are equal and respond to light and accommodation. Lateral nystagmus is present. Speech is slow and slurring, words containing the letters "l" and "r" being especially slurred. He laughs very heartily at times without apparent provocation. There is ataxia of the upper extremities. He has much difficulty in putting the tips of the index fingers in apposition, with the eyes opened or closed. He also

experiences great difficulty in buttoning his clothing or performing any of the finer movements with the fingers. There is lateral curvature of the spine, the convexity being to the right in the dorsal region. There is no deformity of the feet. The gait is ataxic; perhaps the word "inebrious" would better describe the gait. This little patient has frequently been brought home by the police with the statement that he must be under the influence of liquor. He frequently falls and hurts himself. The feet are widely separated in standing. They are inclined inward and there is a tendency to cross the legs in walking. In the effort to prevent the legs from crossing the feet are thrown wide apart. He walks with a rush as though he were chasing after his equilibrium. The legs are weak, but there is no atrophy. The head and trunk are in almost constant motion, a condition which Friedreich termed "static ataxy." These movements of the head and trunk resemble to some extent choreiform movements, and have been styled by Charcot "choreiform instability." There is some tremor of the hands in grasping objects. The handwriting is irregular and tremulous.

Reflexes.—The knee jerks and ankle jerks are absent; likewise the bicipital, tricipital, ulnar and radial. The abdominal and cremasteric are present. The Babinski sign is apparently present, and more marked on the left side.

Sensibility.—Heat, pain and muscle senses are practically normal. Electrical examination is negative. Functions of the rectum are normal. Recently there has been a slight tendency to incontinence of urine.

Special Senses.—Examination of the eyes by Dr. Griffith shows the fields of vision to be about normal. There is some astigmatism. The pupils are normal in size and respond to light and accommodation. Lateral nystagmus is constantly present. Hearing is acute. Mental perception and memory are good. There are no trophic or vasomotor defects.

This case would appear to present all of the typical signs and symptoms of Friedreich's Disease, with the one exception of the absence of the peculiar form of clubbed foot which is often seen in this condition. This club foot consists of a shortening of the foot with exaggeration of the plantar arch. There is some extension of the proximal phalanges with flexion of the distal, in all the toes; but this deformity when present at all, is usually

more marked in the great toe, and it may be the first symptom detected by the family. That this symptom may be entirely absent in well-marked cases of this disease is evidenced by the fact that of the 55 cases of my series in which any mention was made of the feet, eight showed no signs whatever of the club foot.

The 100 cases of which a partial clinical digest has been made, are distributed as follows: Collins, 9; Starr, 3; H. Bramwell, 3; Mingazzini and Perusini, 3; Gladstone, 2; Seguin, 5; Whyte, 4; Bury, 2; Gowers, 5; Wells, 5; Clarke, 3; Griffith, 3; Warren (by Griffith), 4; Everett Smith, 6; Hodge, 3; Sinkler, 2; Rankin, 3; Suckling, 3; Shattuck, 3; Ormerod, 4; Greenlees and Purvis, 2; Nolan, 3; and Burr, Best, Simon, Pitt, Ladame, Rennie, B. Bramwell, Nammack, Dana, Mackay, Hunter, MacAlister, Mackenzie, Peck, Putnam, Pearce and Swan, Carslaw, Edleston, Symes and Robins, each 1.

The 21 cases reported by Sanger Brown have been excluded from my list for the reason that they have already been made the subject of study by several investigators, and for the further reason that I am still in doubt concerning the diagnosis in Brown's cases, many of them appearing to me to be far from typical.

Age of Onset.—Of the 100 cases studied, 67 per cent. began at or below the age of twelve. These figures compare favorably with those of Griffith, who found in a review of a large number of cases that 68½ per cent. began at or below twelve years. Twenty-six per cent. of my cases and about 30 per cent. of Griffith's cases began at or below the age of six. Eighty-four per cent. of my cases began at or below 16 years, while only 7 per cent. had their origin at or above the age of twenty. Many cases here studied were not included in Griffith's series.

Familial Character of the Disease.—"Family Ataxia" is given as a synonym for this disease by many authorities, and their reasons for so doing will be understood when the statement is made that about 80 per cent. of the cases here presented were of the family type; that is to say, in 80 of these 100 cases more than one case of this disease were found in the same family. Friedreich found no isolated cases. But about 20 per cent. of these cases were isolated, only one case having occurred in each of the 20 families. Isolated cases in this series are reported by Collins, Starr, Simon, Gladstone, Ladame, B. Bramwell, Nam-

mack, Whyte, Sinkler, Mackenzie, Peck, Carslaw, Edleston, Hunter and Symes, and probably by Putnam and by Pearce and Swan.

Heredity.—In only 6 cases was there direct hereditary transmission. These were reported by Peck and Everett Smith. In Peck's case the mother and mother's sister had the same disease. Smith had 5 cases in one family which were the result of direct heredity from the father. In Nolan's cases the grandfather on the mother's side probably died of cerebellar disease. In 62 cases there was absolutely no hereditary transmission. In the remainder of the cases the question of heredity is left to our imagination.

Mental Condition.—The mental condition was probably normal in all but 7 cases. Nolan reports three cases of genetous idiocy in connection with this disease. Collins, Mingazzini and Perusini, Greenlees and Purvis, and Warren each reports one case in which the mental condition was abnormal, though not markedly so.

Physiognomy.—Of the 13 cases in which the expression of countenance was mentioned, practically all presented a dull, torpid appearance.

History of Injury.—Two cases were reported to follow an injury to the head. One by Putnam, the other by Pearce and Swan.

Syphilitic History.—Starr and Clarke each reports a case in which there was probably a history of syphilis.

Alcoholic History.—There was a marked alcoholic history in one or other parent in 14 cases, and in a grandparent in 4 cases.

History of Phthisis.—Seguin reports 2 cases in which the father had phthisis, and Mingazzini and Perusini one in which the mother was phthisical.

Blood Relationship of Parents.—In 8 cases (2 by Mingazzini and Perusini, and 3 each by Hodge and Rankin) the parents were cousins.

Following Some Other Disease.—Ten cases followed closely upon measles or scarlet fever, or both. Five other cases followed such diseases as remittent fever, whooping cough, dysentery and rheumatism.

Insanity.—A history of insanity was found in 3 cases, 2 reported by Mingazzini and Perusini and one by Starr. In the cases of the former an aunt was insane, while in Starr's case the father died of paresis.

Nervous History.—In the single cases of Ladame and Symes

one or other parent was very nervous. In one of Seguin's cases the father suffered from migraine, and in Pitt's case the mother had chorea.

History of Cancer.—The mother of Hodge's 3 cases died of cancer of the liver.

Presence of Choreiform or Jerky Movements of the Head and Trunk.—This symptom was marked in 51 cases. It was more prominent when the patients were standing than when seated. In some instances choreiform movements were found in the face, arms and legs.

Inability to Maintain the Erect Position with the Eyes Closed.—Of the 25 cases in which special mention of unsteadiness was made, probably 18 showed inability to maintain the erect position with the eyes closed ; and many of the latter number were unable to stand unsupported with the eyes open. The Romberg symptom was recorded as present in only three instances.

Reflexes.—The knee jerks were absent in 71 and diminished in 5 cases. They were recorded as exaggerated in only 6 cases. All deep reflexes were recorded as absent in three instances. In a large majority of the cases no mention was made of any of the deep reflexes other than the patellar tendon. Pearce and Swan's case was of interest in that the knee jerks were present one year and absent the next year.

The Babinski sign was present in 3 cases ; one by Putnam, one by Mingazzini and Perusini, and my own case. Oppenheim looks upon the Babinski sign as a frequent symptom of Friedreich's Disease.

Concerning the superficial reflexes, which are not especially important in this disease, the plantar, cremasteric and abdominal were present in 23 cases. In a few instances the superficial reflexes were absent. The plantar reflex was exaggerated in 5 cases.

Foot Deformity.—Of the 55 cases in which the condition of the feet was given, 47 showed more or less characteristic deformity. This deformity, which appears to be markedly characteristic of this disease, consists of extention of the toes at the proximal articulation and flexion at the distal articulation, with more or less arching of the sole. This condition is always more prominent in the great toes than in any of the others. Talipes equino-varus was recorded as present in 6 cases, and talipes valgus in 3.

Spinal Curvature.—The condition of the spine was spoken of

in 64 cases. Of this number 48 showed lateral curvature, the location of which, in a large majority of the cases, was in the dorsal region. Antero-posterior curvature was present in 4 cases. In Sinkler's case the antero-posterior curvature was muscular and not due to caries. In Dana's case the kyphosis, which was ordinarily present, would disappear during convulsive seizures. In 12 cases there was no spinal curvature.

Speech Affection.—In 12 instances speech was not affected. Of the 70 cases in which there was affection of the speech, perhaps the difficulty would best be described by the words "slow," "drawling," "slurring," "indistinct" and "jerky or ataxic." In only 2 cases was the speech considered to be of the "scanning" type.

Impairment of the Motor Power of the Legs.—That many of the reporters of these cases looked upon this condition as self-evident is very apparent, since there was specific mention of some loss of otor power in the legs in only 20 cases. In most of these cases there was no atrophy whatever. Hunter reports a case with marked atrophy in the left leg, which he thinks was probably due to an old infantile paralysis.

Beginning of Ataxic Symptoms.—In 78 cases ataxic symptoms began first in the lower extremities ; and in only 6 cases did they begin in the upper extremities. Several cases were doubtful.

Sphincters of the Bladder and Rectum.—Of the 51 cases in which mention was made of the sphincters, 42 showed the bladder and rectal sphincters to be normal. There was slight incontinence of urine in 4 cases, and micturition was delayed in 5 cases.

Gait.—In 23 cases the gait is described as "staggering or drunken;" in 19 as "ataxic;" in 11 as "unsteady, awkward or jerky." In a few cases the gait is called "shuffling or reeling." Putnam describes the gait in his case as "ataxic cerebellar reel."

Eyes.—The field of vision was practically normal in all cases cited. In 73 cases the pupils were normal, with normal reaction to light and accommodation. Wells reports one case in which the Argyll-Robertson pupil was present, and one in which the pupil did not respond to light. In 25 cases no mention was made of the pupils. The optic nerves and external eye muscles were normal in all cases where mention was made of them.

Nystagmus.—Nystagmus was reported as present in 51 cases and absent in 20. Lateral nystagmus was specifically mentioned in 29 cases.

Sensibility.—Sensation was practically normal in 41 cases; in many cases no mention was made of it. Muscular sensibility was diminished in 6 cases. There was diminution of heat, pain and touch in only 4 cases.

Lightning or Other Pains.—Pains or cramps in the legs were present in 6 cases; lightning pains in 2; dull backache in 2; and girdle sensation in only 1 case.

Vertigo, Faintness, Etc.—Vertigo was decided in two cases; faintness and giddiness in 4 cases. In 2 cases there was syncope (one by Dana, the other by Greenlees and Purvis). A case of Ormerod's had vomiting attacks.

Electrical Reactions.—It is very evident that little importance was attached to the electrical conditions in this series of cases. In the three or four instances in which mention was made of the electrical reactions they were, generally speaking, normal. Hunter's case, showing marked atrophy in the left leg, has already been cited.

Conclusions.

Judging from a clinical study of this series of one hundred cases of Friedreich's Disease, one is led to conclude that the term "hereditary ataxia" as applied to this disease is clearly a misnomer.

The more important positive and negative signs and symptoms (as modified from B. Bramwell) would appear to be as follows:

More Important Positive Signs and Symptoms.—1. Onset of disease usually before the twelfth year. More than 25 per cent. of cases begin before the sixth year.

2. Familial character of the disease in about 80 per cent. of cases.

3. Ataxia, beginning usually in the legs, and finally extending to the arms.

4. Some impairment of motor power of legs and especially the muscles on front of legs. Limbs are thin, but there is usually no localized atrophy.

5. A peculiar gait, which may be termed inebrious, or ataxic cerebellar.

6. Absence of knee jerk. Highly characteristic symptom.

7. A peculiar form of club-foot. Markedly characteristic.

8. Lateral curvature of the spine. Present in about one-half

the cases. Antero-posterior curvature may be found in a small percentage of cases.

9. A peculiar affection of speech, which may best be described as jerky, slurring or ataxic.

10. A vacant or dull, torpid expression of countenance with lessened mobility of the facial muscles under emotion or in talking.

11. Nystagmus. This symptom is found in about one-half the cases. Lateral nystagmus is usually found.

12. Presence of choreiform twitchings and movements, especially of the head and trunk, when the body is at rest.

13. Inability to maintain erect position with eyes closed. Constant attempt at balancing, when standing with eyes opened.

14. Vertigo, faintness, occasional pains or cramps in the legs, and dull backache have been observed in some cases.

More Important Negative Signs and Symptoms.—1. Absence of lightning pains and of any marked impairment of the muscular sense, of the sensibility of the skin (to touch, heat, cold and pain) and absence of derangement of the special senses.

2. Absence of any derangement of the functions of the bladder and rectum and of the sexual apparatus.

3. Absence of Argyll-Robertson pupil, of myosis, of optic atrophy, and of paralyses of the external muscles of the eyeballs.

4. Absence of trophic derangements in bones, joints, skin, hair, nails and teeth.

5. Absence of headache, vomiting, optic neuritis, and of derangements of memory and the intellectual faculties.

6. Absence of scanning or bulbar speech.

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Dr. Wm. A. White said that he could not add much from his own experience to the facts already presented by Dr. Robins. Dr. White has seen one case of this disease among the inmates of St. Elizabeth's. This was a boy of 14, who presented all the classical signs of the disease—facies, ataxia, nystagmus and foot de-

formity ; the latter symptom was not marked. His mentality was much impaired, which accounted for his presence at the asylum. A sister of this boy also had the disease.

The digest of cases read by Dr. Robins was extremely instructive, because it indicated the variety of symptoms which may be met with in the same disease. It is well to be reminded of this partial dissimilarity of cases, as it shows that degeneration of the cord does not in a given disease always follow the same tracts, nor does it always happen in the same sequence. Sometimes motor symptoms predominate, sometimes sensory ; at times the degeneration is most marked in neurons of the upper segments, at others in neurons of the lower segments. Sometimes there is cerebellar trouble, with vertigo ; this symptom may be due to lesion of the vestibular branch of the eighth nerve. The most marked symptoms of Friedreich's disease in Dr. Robins' case were : (1) Facies, —the very characteristic dull, stupid expression, taken in connection with the unexpectedly bright, intelligent answers to questions.

(2) The gait—a very beautiful example of the type denominated cerebellar, most nearly likened to the gait of a drunken man ; this gait is different from all other types to be observed in nervous diseases met with at this early age. It is not at all like the gait in Little's disease, which is spastic, with cross-legged progression, and probably due to injuries to the motor tract during parturition.

As to the pathology of Friedreich's disease, it would appear to be due to developmental defect in the cord and cerebellum.

Dr. S. S. Adams had elsewhere seen the boy presented by Dr. Robins, which made the second case that had come to Dr. Adams' notice in the past five years. The other case was the child of an old man and a young wife ; the father was nearly seventy when the child was born. The symptoms in this case were even more marked than in Dr. Robins' patient ; the feet were deformed, with both talipes equinus and hammer toe. Added to the usual symptoms were very distressing choreic movements. For this latter trouble the child was brought to Dr. Adams, and after four weeks' treatment with Fowler's solution the chorea was much improved ; but the gait was as bad as ever, and he was obliged to give an unfavorable prognosis. After this the patient went from under his care, the father seeking some one who would give a good prognosis. This boy, in spite of his stupid expression, was remarkably bright ; although only twelve years of age, he had reached the eighth grade at school. Dr. Adams was scarcely able to credit this statement when he first observed the boy ; but it was proven, and the boy had to be taken from school because of the disagreeable effect of his choreic movements upon the other children.

The patient presented by Dr. Robins came to the Children's

Hospital about two years ago. Dr. Adams wished to state, in compliment to Dr. White, that a fourth-year student made a correct diagnosis in the case, and pointed out to his fellow students the characteristic features of the disease. A singular feature of the peculiar gait of Friedreich's ataxia is that children afflicted with it are often picked up on the street and taken home on the assumption that they are drunk ; the boy presented by Dr. Robins had often been distressed in this way.

The bad prognosis is a very unfortunate feature, but there is nothing to be done except to ameliorate symptoms.

Dr. Robins had given such a clear and comprehensive digest of the disease that little can be added, but the pathology given by Friedreich and referred to by the essayist, has been supplanted by a more modern conception.

Dr. Randolph inquired as to the prognosis with respect to duration of life. Does Friedreich's disease shorten life ? Does it predispose to other diseases ? What is the usual duration of the disease ?

Dr. Bishop was much interested in this case. Some years ago he had seen a tabular statement as to Friedreich's disease, and at that time only 200 cases had been reported. The disease is, therefore, so rare as to be a clinical curiosity. The physician may grow old in practice without seeing a single case.

The prognosis is always bad, although the duration of the disease may extend from two to forty years.

Though his acquaintance with the affection is limited to the statements contained in the books, he believes that the familial character of it does not always indicate heredity, but is due to the identical environment of children of the same family. Personally, he thinks that the location of the spinal lesion will be found in the lumbar enlargement of the cord ; and in consequence, perhaps, of an inherited or acquired degenerative tendency under the increased demands of puberty in this location, the spinal centers are inadequate to the full performance of their functions, and a break-down follows.

According to the books there is no disease more clear cut as to its points of differential diagnosis than Friedreich's ataxia. He has observed that many cases have been excluded, as set forth by Senator, from the tables of this disease on account of cerebellar invasion ; hairs have been split over the classification of this rare affection, and all cases presenting the peculiar symptoms, unless characteristic, should not be grouped together. He thinks that if a case presents the first symptoms as late as 20 or 25 years of age it should be excluded, and cases due to cerebellar disease cannot in reality be called Friedreich's disease.

Dr. S. Ruffin said that he was particularly interested in Dr. Robins' case because he had had the privilege of showing the same patient a year or two ago to his class at the medical school.

Since then the disease has made considerable progress, though at that time the symptoms were well marked and characteristic, the gait was more stamping, not unlike that of locomotor ataxia, the nystagmus was easily observed though not pronounced ; the mind was very bright ; the deep reflexes were completely abolished.

From an anatomical standpoint the disease is a developmental defect of the postero-lateral columns of the cord. It is one of the combined system diseases, in the same general class with locomotor ataxia and spastic paraplegia. In those cases where the cerebellar lesions predominate the deep reflexes may be retained.

He had enjoyed the paper very much and appreciated seeing the case again.

Dr. Acker said that the statement had been made that this case had been diagnosed by Dr. Adams as chorea. Dr. Acker had seen the boy with Dr. Adams at the Children's Hospital, and could say positively that Dr. Adams had made the diagnosis of Friedreich's ataxia. Dr. Acker had seen another case during the past summer in which the characteristic gait, facies, etc., were well marked.

Dr. Griffith had had the pleasure of examining this patient's eyes. It was the only case he had ever seen, and he had expected to find contracted visual fields. On the contrary, the fields were normal, and vision practically normal. During his examination the nystagmus was variable but unmistakable. On account of the partial ptosis, nystagmus and choreic movements the examination was very difficult, and both he and the patient were exhausted at its completion. Since then the ataxia has progressed.

Dr. Fremont-Smith asked if Dr. Robins had found any specific statements as to the condition of the arteries in the cases in literature. Was there any arterial disease, any arterio-sclerosis, either general or local ? We know that arterio-sclerosis is responsible for certain degenerations in the central nervous system.

Dr. Robins said that as far as his investigations into the pathology of the disease had gone, little mention had been made of sclerosis of the spinal vessels as a cause of the disease. As to the duration of life, the cases varied very much ; some patients lived to be 50 or 55 years old, others succumb in five or six years.

TWO CASES OF CEREBRO-SPINAL MENINGITIS.*

By EDWARD E. RICHARDSON, M. D., M. S.,

Washington, D. C.

F. K., male, white, age 32; occupation, freight conductor; family history, negative; previous to last illness he had enjoyed uninterrupted good health.

Was taken ill during the night of November 20, 1906, with slight rigors, which were repeated, but there was no definite chill. The following morning he complained of headache and backache, as well as a general muscular soreness. Pulse approximately normal; temperature 100. He was attending his wife, who also suffered with the same disease, having been attacked about 36 hours previous to the onset of the disease in the husband. The evening of the same day the symptoms mentioned above had increased in severity, the pain in the head and lumbar region being severe. Pulse 68, which was slightly slower, if anything, than in the morning; temperature 101. Deafness was pronounced, but no photophobia, and as far as could be ascertained, the other special senses were not affected. Vomiting became a distressing symptom at this time but disappeared the following morning. There was also at this time (evening of the first day) a beginning muscular rigidity, becoming quite pronounced later in the evening; this was observed in the arms and legs and to a slight extent in the neck. No opisthotonus at this time, and only slightly marked later in the course of the disease. A purpuric rash appeared on the back of the hands and wrists, especially, but scattered over nearly the entire body. Bowels active and urine voided without difficulty. He was seen at this time by Dr. Sterling Ruffin, in consultation.

The following morning (the second day of the disease) there was a well-marked remission of all the above symptoms except the deafness, which remained as on the previous day. The muscular rigidity had disappeared. Nourishment was taken with no disinclination. The temperature fell to about 100; pulse continued as before. The next day the symptoms had all returned and increased in severity. Consciousness was still retained and the cephalic and lumbar pains were agonizing. Muscular rigidity

*Reported, with specimen, to the Medical Society, November 28, 1906.

became pronounced and continued until death. Deafness was not complete; no apparent photophobia. Pupils were somewhat contracted but responded to light, although slowly. The remaining special senses were not affected, as far as could be determined. Temperature 102; pulse 82; respiration not much affected. Urine voided without difficulty, but unconsciously and in considerable quantity. Nourishment still taken, though with increasing difficulty on account of rigidity of muscles of deglutition. The next day (the fourth of the disease) coma supervened and continued until death, which occurred between the sixth and seventh days of the disease. The temperature rose to 103 and 104, the pulse and respiration becoming more rapid as dissolution approached. No marked opisthotonus was noticeable, although the muscular rigidity was almost complete. The contraction of the facial muscles produced a slight *risus sardonicus*. Slight localized convulsive movements were present at intervals before the rigidity had become as marked as at the close of the disease. The pupils contracted at first, as mentioned, dilated somewhat later in the progress of the case. No pulmonary symptoms whatever. It was noted also that while a rectal temperature of 103 could be obtained, the axillary temperature would indicate only about 99.5 with five minutes' exposure.

At the autopsy the dura appeared unaffected, and there was no bulging on removal of the calvarium or dura. The pia and arachnoid were deeply injected. An examination of the brain showed a well-marked fibrino-purulent deposit along the Sylvian fissure, extending from the under surface of the brain well upward on the sides. The under surface of the brain showed the same appearance over the entire base, both on the under surface of the cerebrum and under and posterior surfaces of the cerebellum. This deposit extended around the infundibulum and pituitary body. This last is mentioned on account of the theory that the infection may have found its way from the nasal cavity through the sella turcica. While the evidence of the disease was well marked in the region just mentioned, it could hardly be affirmed that it was any more so here than on the larger part of the under cerebral surface. The medulla showed the lesion mentioned more markedly than the structures at the base of the brain and around the Sylvian fissure, although the difference in the appearance of the two regions as regards the severity of the process was not

great. A bacteriological examination of the cerebro-spinal fluid by Dr. Brandenburg disclosed the *diplococcus intracellularis meningitidis.*

Added interest attaches to this case inasmuch as it was almost paralleled by another, the wife of the man from whom this specimen was obtained. The onset of the disease in her case was from 36 to 48 hours before that of the husband, and death also occurred at about the same length of time before his death. The clinical history of one case is almost exactly that of the other. The train of symptoms being, during the progress of the disease, approximately of the same order in both cases and preceding the corresponding symptoms of the other case by about the same interval of time as the onset of one preceded that of the other. The woman had a history of a pre-existing nephritis, and during the disease albumin was abundant in the urine. (The man's urine was not examined.) The deafness, while present in the wife, was not marked before the supervention of coma rendered the determination of such a condition impossible, as in the case of the husband. The onset, remission, and later course of the disease were almost identical. No evidence of an otitis or pathological condition of the nasal and adjoining cavities was present in either case. This is mentioned as regards any bearing that it might have upon the possible mode of entrance of the infection. The predisposing conditions to this disease as mentioned in some text-books, viz: unsanitary surroundings, depressing mental and bodily conditions, prolonged exertion, etc., were not present here. The sanitary conditions were fully equal to and probably better than the average. It is hardly necessary to add that these predisposing conditions that are mentioned in certain text-books are rather those of *all* diseases than of this particular one, and their enumeration in connection with this disease only emphasizes the fact that we do not know any particular causes predisposing to it.

It may be mentioned also that both the above persons had been residents of this city and the same locality (same house in fact) for the past five years or more, and had not been away from the city during the past season.

CASE OF HYPERNEPHROMA OF KIDNEY; NEPHRECTOMY.*

By ISAAC S. STONE, M. D.,

Washington, D. C.

The history of the case is as follows: Mrs. W., white, age 54; had been perfectly healthy until early in July, 1906, when, for the first time, she noticed an enlargement of her abdomen and called the attention of her physician to it. Its size at that time was apparently as great as when she came in for operation. Her physician thought she had an ovarian tumor, and so informed her. She had pain in the region of each kidney, worse in the left side about the healthy kidney than in the right side about the tumor itself. She appeared to be in fairly good condition, but had lost at least twenty pounds in weight. A blood examination showed 60 per cent. haemaglobin, with slight leucocytosis.

The tumor answered in every way to hydronephrosis. It was larger when we made the first examination than a week later at the time of operation. The ureteral catheter also discharged a small amount when an attempt was made to catheterize the ureters. We found the outlines of the growth extending beyond the median line to the left side, to a level of the anterior spine of the ilium below, and to the liver above. Its size was about that of a fetal head at term. The left kidney could not be palpated. The urine contained epithelium and a few leucocytes. Cystoscopic examination showed decided inflammatory changes about the ureteral orifices. The bladder was otherwise normal. We suspected stone in both kidneys, but failed absolutely to find one with either x-ray or ureteral catheter. An examination with the Harris segregator showed the right kidney functionless, and the left doing all the work of excretion. The ureteral examination with the flexible bougie was not a success, and we were to make a careful inspection of the condition of the left kidney before removing the tumor. The operation was performed November 19, when the tumor here shown was easily removed. The left ureter was exposed through an incision in the loin, and a bougie passed through a slit in the ureter down into the bladder. No obstruction was found, and we then proceeded to do the nephrec-

*Reported, with specimen, to the Medical Society, November 28, 1906.

tomy without further anxiety. The patient has made a most highly satisfactory recovery, the remaining kidney being amply competent to perform the work of both.

The following notes are taken from the report of the pathologist, Mr. J. S. Neate. The divided kidney shows a cauliflower-like growth, with nodules, varying in size from that of a pea to that of a marble. The new growths are encapsulated by a condensation of kidney tissue, and the cells of the tumor are epithelial like, cuboidal, polyhedral, or quite irregular, aggregated in clusters, resting on fine fibrillae or delicate trabeculae; these cells conform more closely to the type in the normal adrenal body than any other. There is no tubular arrangement such as is found in adenomata. The adrenal type of cell; the evidence of mitosis; the metastasis in the kidney; and the typical arrangement of clusters, would indicate malignancy.

CASE OF AORTIC REGURGITATION AND FLOATING LIVER.*

By E. P. MAGRUDER, M. D.,

Washington, D. C.

G. R., male, colored, age 53, laborer, married; habits temperate, especially as to alcoholics. His father died of pneumonia, age about 45; mother died at 73, cause unknown; he had three brothers and two sisters, all dead; oldest brother died at 14, of diarrhoea; second, at 7, of smallpox; third, at 30, of sun-stroke; one sister died at 25, of sun-stroke, the other at 44, effects of a fall.

The patient had measles and whooping-cough in childhood; occasional chills and fever at 20; about sixteen years ago he had an attack of articular rheumatism, and four years later another attack of the same disease, neither of which, he says, occasioned any serious illness. For the most part he has enjoyed good health, and always worked hard.

His present illness began about Nov. 20, 1905, after a hard day's work, lifting heavy stones in a quarry, where he had been

*Reported and patient presented to the Medical Society, December 5, 1906.

working for some months. In the evening as he started homeward he noticed for the first time a queer sound like the rubbing together of his overalls, but it came from his chest. Shortness of breath upon slight exertion soon followed. He consulted a physician in Montgomery Co., Md., who told him he "must be more careful with himself and not do any heavy work." So far as could be learned, he had been given digitalis.

He presented himself at the Emergency Hospital, this city, last May. Examination revealed a hepatoptosis, and cardiac disturbances so grave that he was advised to enter a hospital for treatment. He complained at that time of dyspnoea, anorexia, bronchitis, broken sleep, loss of weight and strength; there was arterio-sclerosis, oedema of lower extremities, albuminuria 0.2 per cent., brachial blood pressure 228 millimeters, great anxiety.

He is about 5 feet 6 inches in height, muscular, erect, general appearance good; skin normal, no oedema or eruption; pulse arrhythmical, about 80; arteries somewhat tortuous, sclerosed; sphygmomanometer registers only 155; pulse strong, at times "Corrigan." Respiration 22, frequently arrhythmic. The striking symptoms are cardiac rather than hepatic. He complains of palpitation of the heart and a mild soreness upon pressure over the epigastrium.

Has occasional headache, sleeps well, no disturbances of sensation or motility. Buccal membranes markedly pigmented; tongue of good color; circumvallate papillae extraordinarily developed; appetite excellent; no thirst or vomiting, bowels regular, no gastroptosis. Respiration 22, rhythmical; occasional cough and expectoration; microscopic examination of the sputa shows the so-called "heart-disease cells," *i.e.*, alveolar epithelial cells, containing numerous haematoidin granules (first observed by Virchow). Urinalysis, negative.

Fluoroscopic.—No apparent enlargement of the right heart, but considerable enlargement of the left ventricle. The usual shadow of the liver is entirely absent.

Etiology.—*Cardiac:* The following may be cited as conditions contributory to aortic regurgitation: 1st.—Acute endocarditis, attended with extensive ulceration—usually terminating in speedy death. 2d.—Syphilis, of which there is no history in the case before us. 3d.—Chemical irritants, such as uric acid, lead poisoning, alcohol—none suspected here. 4th.—Chronic endocarditis

affecting the aortic valves by direct extension of aortic endarteritis. We must remember, however, in this connection that arteriosclerosis, present in this case, may be secondary to chronic valvulitis. 6th.—Pronounced dilatation in the ascending portion of the arch near the valve, which is rare; or an aneurism just beyond the aortic orifice—neither of which could be observed in the fluoroscopic examination here. 7th.—Age and sex; much more frequent in males than females, primarily because a greater proportion of the former is engaged in occupations causally related to the disease. The great majority of cases arises in advanced middle life, a relatively smaller number at a more advanced period than is found in young adult life. Our patient is 53. 8th. —Augmented aortic tension-strain. Occupation is more noteworthy than alcohol as a cause of aortic regurgitation by increasing vascular tension. We cannot deny that strong-bodied men at middle life engaged in such occupations as demand strain—"not a sudden, forcible strain," says Osler, "but a persistent increase of the normal tension to which the segments are subject during the diastole of the ventricle—are the most frequent subjects of aortic regurgitation." This observation is of exceeding significance in the history of the case before us. "I was at Cleveland Park," says the patient, "engaged in lifting heavy stones." This work had been kept up for some months, there was "a persistent increase of the normal tension to which the segments were subject during the diastole of the ventricle," and up to that particular hour when his mental vision became perforce introspective, when this loud cardiac murmur for the first time caught his ear, the patient did not know he had a heart.

Floating liver is very uncommon. So far as the writer has been able to learn there have been but eighty cases reported in the literature. About ten years ago J. E. Graham collected seventy cases from this source. Since then about ten more have been added. Nearly all have been females. The organ moves slightly in the pendulous abdomen of enteroptosis, and in cases of repeated ascites. At the posterior margin the organ is so bound to the inferior vena cava and diaphragm that little mobility at this point is possible except in case of a meso-hepar or a congenital ligamentous union of these structures. The suspensory and triangular ligaments may, however, be subject to considerable relaxation, the former 3 inches, the latter $1\frac{3}{5}$ inches, and, in

the erect position, permitting the organ's upper surface to lie almost below the costal margin, as in the case before us. When the organ is tilted forward a very large surface of the lobes comes in contact with the abdominal wall, and the error in such instances is by no means rare to think that the organ is enlarged. Such, possibly, is the case in point, for the writer is much of the opinion that the dull soreness upon pressure over the epigastrium complained of by the patient, and for the relief of which he had been treated for indigestion, is due almost entirely to traction upon the suspensory ligament, for no better reason than that the abdominal bandage recommended by the writer gives absolute relief, the symptom returning as soon as the patient attempts to go without it.

It will be understood, of course, that in raising the liver, not only is traction upon the suspensory ligament, upon the connective tissue which unites the uncovered area of the right lobe of the liver to the diaphragm, and, as observed by Faure, the traction upon the hepatic veins which join the vena cava—not only are they all relieved, but what is of infinitely more interest to my long-suffering patient than all this high-sounding phraseology, is the fact that, in elevating the liver the stomach likewise is elevated, and traction upon the gastro-hepatic omental attachment to the lesser curvature is prevented, and the patient is at ease.

Symptoms: Shortness of breath upon exertion; dyspnoea, especially at night; pain over epigastrium; at times, cough; occasionally, vertigo.

His thorax is well developed and muscular; apex beat displaced one interspace below and two and three-sixteenths inches to the left. There is a slight precordial bulge.

There is a forcible, heaving cardiac impulse, a very distinct purring thrill diffused over an area of three inches square at the base of the heart. The left thoracic segment is greater than the right by five-eighths inch. Percussion gives considerable increase in the area of cardiac dulness, extending downward and to the left. A loud diastolic murmur with seat of maximum intensity at the sternal border of the second right interspace, and transmitted anteriorly and posteriorly over the entire thorax and abdomen, from the clavicles above to the pelvic brim below, clearly heard also in the vessels of the neck, completely obliter-

ates the usual myocardial and valvular sounds. This is a loud, long-drawn bruit, almost a moan, and the writer takes it, of course, as caused by the reflux of blood from the aorta into the ventricle. Frequently replacing this diastolic murmur is a reduplicated or double murmur, iambic in rhythm, the one diastolic, the other exactly presystolic in time. This last, the writer takes for a "Flint" murmur, and as explained by Flint is due to an extreme dilatation of the ventricle, as a result of which the mitral segments during diastole are forced back against the wall, and, therefore, lying in the blood current, they produce a sort of relative narrowing, the result of which is a vibratory murmur in quality not unlike the presystolic murmur of mitral stenosis.

Broadbent's theory in this regard is to the effect that the regurgitant current from the aorta, impinging upon the anterior or aortic flap of the mitral valve, may set it into vibration and thus produce the murmur. While Osler observes: "This apex diastolic murmur of aortic insufficiency occurs in a considerable proportion of all cases. It is variable, and may disappear as the dilatation of the ventricle diminishes."

Let us look for a moment at the arteries. There is visible pulsation in the peripheral vessels. The carotids throb forcibly, the temporals dilate, the brachials and radials expand with each heart-beat. They have a characteristic jerking quality. The throbbing carotids in the neck suggested aneurism and led to the fluoroscopic examination. Notice the suprasternal notch and the great vessels beneath the right sterno-cleido-mastoid; see the abdominal aorta lift the epigastrium at each systole, and feel the great prolapsed liver-mass pulsate with its expansile force borrowed from the same source; look more closely for the capillary pulse, seen through the finger-nails; grasp the fore-arm above the wrist and, holding it high, feel the Corrigan or water-hammer impulse forcibly strike the palpating finger with its quick, jerking effect, and its immediate recession or collapse; then observe that short but appreciable interval between the heart-shot and the fall of the bullet just as it strikes the radial bull's-eye—in a word, observe this symptom-complex, and tell me if this is not aortic regurgitation.

The lower edge of the liver is seen as a distinct linear prominence, extending transversely from the right mammary line almost to the corresponding line on the opposite side. Relative

dulness of the upper border of liver, right side, is at sixth interspace in the mammary line, eighth in midaxillary; eleventh in scapular line. Lower border of hepatic dulness, right side, is on a horizontal line with the umbilicus, curving an inch above the umbilicus at the median line, and extending two inches beyond this to the left. The vertical width of hepatic dulness is as follows: On the right in mammary line, six inches; in midaxillary line, five inches; in scapular line, three inches; in anterior median line, seven inches; in left parasternal, six and one-half inches. An extensive hepatic area is easily palpable. By Glénard's *procédé du pouce* the edge of the organ may be felt to slip above the fingers with the respiratory movement. Its character is smooth and soft. The organ distinctly pulsates. It is freely movable from side to side and from below upward.

The physical signs of the stomach are those of a slight dilatation; the spleen is a trifle enlarged. There is no perceptible abdominal tumor except the liver-mass. The kidneys are apparently in their normal position, and either may be felt on deep palpation. As stated before, the condition here is not that of enteroptosis.

Diagnosis.—*Cardiac:* The diagnosis of aortic regurgitation is based upon a diastolic murmur over the aortic area, throbbing arteries, the peculiar pulse, hypertrophy of the left ventricle, and the sphygmographic charts.

Diagnosis.—*Hepatic:* Floating liver is the diagnosis, made upon the presence of a large tumor in the abdomen, in this case easily distinguishable from tumefaction of the other abdominal organs for the following reasons: 1st.—The notch is palpable; 2d.—There is a tympanitic note over the normal hepatic region; 3d.—The unusual mobility of the tumor; 4th.—It is possible partially to replace the organ; 5th.—Its size and consistency; 6th.—The relatively long chest and lax recti muscles, favorable to the condition; 7th.—The confirmatory fluoroscopic examination, showing the total absence of the shadow as produced by the upper border of the normal liver.

Prognosis.—*Cardiac:* Eventually unfavorable, though compensatory hypertrophy may go hand in hand with dilatation, and, while subject to sudden death to a larger degree than results from any other valvular lesion, one may, in the practice of moderation, live for years. This condition following endocarditis, however,

is much more favorable than when sequent to arterio-sclerosis. This fact, coupled with the age of the patient, makes for shorter days ; for with progressive sclerosis of the arch and encroachment upon the coronaries, we may expect myocardial degeneration and with it, the end.

Prognosis.—*Hepatic :* Favorable.

Treatment.—*Hepatic :* Mechanical support, a snugly-fitting abdominal bandage, preferably of linen, and with straps passed around the buttocks, like a suspensory bandage, to prevent its riding above the hips.

Treatment.—*Cardiac :* The writer protests against digitalis as a routine stimulus for cardiac failure. In dilatation—when by its use slow regularity supplants the many ineffective contractions of the over-distended ventricle, this followed by cardio-respiratory rhythm and the absorption of pulmonary oedema—digitalis produces striking effect. It is powerless, however, in fatty degeneration. It disturbs the stomach, and acts on the muscular arterioles as it does on the ventricle, and thus in arterio-sclerosis increases an already too high tension. Nitroglycerin will counteract this undesirable vascular effect of digitalis by dilating the arterioles while it stimulates cardiac systole.

Strophanthus (the tincture in 10-drop doses)—almost free from the contracting effect upon the arterioles of digitalis—was preferred to the latter ; with strychnine sulphate and nitroglycerin as adjuvants.

A grain and a half of caffeine citrate is better than larger quantities ; for in some cases long continued administration of three or four grains occasions cardiac arrhythmia and distress. Sparteine sulphate in doses of three-quarters or one grain, combined with caffeine and strychnine, often acts better in aortic regurgitation than either digitalis or strophanthus.

Since muscular power is directly proportional to the amount of oxygen consumed, the patient was advised to spend as much time in the open air as the weather would permit. Iron, because a great oxygen carrier in the blood, and a preventive of loss as regards the contractile power in hypertrophied muscles, was added. Meat, because of the high tension pulse, has been largely interdicted, and the value of milk, vegetable diet, and fresh fruit, emphasized. Beans, asparagus and fibrous vegetables—as cabbage, turnips and beets were denied.

Constipation, raising the tension of the abdominal arteries, was prevented by the use of magnesium sulphate and sodium phosphate —one to two teaspoonfuls in a cup of hot water, on rising.

But strong medicines have been allowed only a secondary rôle. With sufficient stimulation to keep the heart going, emphasis has been laid rather upon the importance of hygiene, diet and rest.

Under this treatment the patient's blood-pressure has fallen from 228 to 155; he has gained sixteen pounds in weight, oedema of the lower extremities has entirely disappeared, no trace of albumen is found in the urine; compensatory hypertrophy seems established, and his general improvement is certainly quite marked.

CASE OF HODGKIN'S DISEASE OR TUBERCULOSIS.*

By T. A. GROOVER, M. D.,

Washington, D. C.

R. D., male, white, age 9 years, residence Clifton, Va., consulted me at my office the latter part of April, 1906, and gave the following history:

Family History.—Father and mother living and healthy. Two brothers and four sisters, all older than the patient, are living and healthy. A sister was treated by me for two attacks of pulmonary hemorrhage, the first occurring in February, 1901, the second in March, 1903. These hemorrhages are thought to be of vicarious menstrual origin, and were so reported before a local Medical Society, no lesion being discovered in the respiratory tract or elsewhere which would account for them. She is at the present time perfectly healthy. There is no family history of tuberculosis, nor is any other hereditary taint ascertainable.

Previous History.—The patient has always been considered a healthy child. He had measles and whooping-cough several years ago, from both of which he made good recoveries. Has never had any other illness of moment.

In August, 1905, he had an attack of sore throat, which was thought to be diphtheritic, as there was an epidemic of diphtheria

*Reported, with specimens, to the Medical Society, November 28, 1906.

prevailing in the village at the time. He was not attended by a physician, and his illness was not considered at all serious. However, he never seemed to regain his usual standard of health. He remained puny, lost some flesh, his appetite was variable, he developed a hacking cough, and lately has had night-sweats at irregular intervals. He attended school irregularly until a few days ago. One week ago, a swelling was noticed on the right side of his neck. Since its appearance all the symptoms above mentioned have been exaggerated. His cough has been worse, and he easily tires. Has not complained of any pain. There are no symptoms referable to the digestive system other than the loss of appetite. There are no genito-urinary symptoms. He sleeps well. Is inclined to be a little nervous. Has had no shortness of breath or swelling of ankles.

Physical Examination.—He had a temperature of 102.5. Skin and conjunctivae somewhat pale. Tongue clean. No enlargement of tonsils. Pulse rapid and soft. A mass in the right anterior triangle of the neck, about the size of a small orange, painless, quite hard, movable, not adherent to the skin, and irregularly nodular. Evidently a mass of enlarged lymphatic glands. The glands of the left side of the neck were not enlarged, nor was there any enlargement of the axillary or inguinal groups. Apex of heart at the fifth interspace, one-fourth inch inside of nipple line. No cardiac murmurs. Deficient expansion of chest below right clavicle, and marked dulness at right apex extending downward as far as the third interspace anteriorly, and below the spine of the scapula posteriorly. Breath sounds over this area quite harsh, but retained their vesicular quality. An occasional moist rale was heard over each apex. The abdomen was not at this time carefully examined. It may be of interest to note that the difference in the percussion note in the two sides of chest was so marked that it was noticed and remarked upon by the mother of the patient.

Subsequent History.—The patient visited my office at intervals of about two weeks until July 1. During this time all his symptoms became progressively worse. His cough persisted, and complaint was made of vague pains in the chest. There was progressive weakness and loss of weight, and he continued to have night-sweats at irregular intervals. His appetite was very poor. His temperature at each visit ranged from 100 to 103. There was

no marked change in the physical signs. The glandular enlargement remained stationary. There was no tendency to softening. The dulness at right apex persisted, and rales were at times quite numerous throughout both sides of the chest. At his last visit to my office, in July, in addition to the physical signs above noted, it was discovered that the spleen was somewhat enlarged, extending a finger's breadth below the costal margin. No enlargement of the liver was detected. Repeated examinations of the sputum failed to show any tubercle bacilli; but notwithstanding I had made a tentative diagnosis of pulmonary tuberculosis, tubercular adenitis, and possibly tubercular involvement of other organs, for which the patient had received appropriate treatment.

On account of the fatigue incident to a ride of thirty miles on the train it was deemed best for the patient to discontinue his visits to my office. During the interval from July 1 to Oct. 15 he was under the care of Drs. Mayes and Detwiler, of Virginia, and I am indebted to the former for notes relative to the progress of the disease. About the 15th of September it was noticed that the spleen had increased greatly in size, to such an extent, in fact, as to be suggestive of leukemia, though it was not practicable for them to verify their suspicions by a blood examination. The patient grew progressively weaker. He lost weight, his cough persisted, and he developed an intractable diarrhoea. Complaint was made of vague pains in the splenic area. His temperature ranged from 98 to 101.5. Early in September his ankles began to swell, and he rapidly developed a general anasarca, accompanied by dyspnoea. Preceding the onset of dropsy the glands of the neck began to rapidly reduce in size. The spleen continued to increase in size until within about a week of death, when it was thought to decrease slightly.

I saw the patient, with Dr. Mayes, Oct. 15. He was then in a very critical condition. There was general anasarca, great dyspnoea and cough. The skin and mucous membranes appeared almost bloodless. The glands of the neck had become greatly reduced in size. A few discrete nodules, the size of an almond, could still be palpated in right anterior triangle. A rather superficial examination confirmed the findings of Drs. Mayes and Detwiler with reference to the enlargement of the spleen. It extended about three fingers' breadth below the margin of the ribs, and to the right within about 1½ inches of the umbilicus. The apex

of the heart was displaced to the left of the nipple and was in the fourth interspace. Dulness at right apex persisted. Breath sounds over this area were very harsh and numerous bubbling rales were heard, very suggestive of a cavity. Finer moist rales were heard throughout the remainder of both lungs. Several blood specimens were taken from the lobe of the ear. It was with difficulty that a blood drop was expressed. Fresh covers under the microscope did not show anything characteristic. The leucocytes did not appear to be increased in number. As many as five were counted in one field, but usually only one or two, or none at all were seen. Dr. Carroll kindly stained a specimen for me, and was able thereby to exlude a true leukemia.

The child died Oct. 20. Autopsy 28 hours after death. A fair degree of development. Much swelling of lower extremities. A few isolated glands about the size of an almond on right side of neck. No other enlarged lymphatics could be felt. Very little subcutaneous fat.

The heart was apparently of normal size, displaced upward and to left. Very little fluid in pericardium. Pleura of right lung adherent throughout, considerable force being required to separate it. Surrounding the bronchi and aorta, and adhering to the lung on its posterior aspect, was a hard, irregularly shaped mass fully as large as an orange. It extended upward and outward as far as the middle of the clavicle, compressing the apex of the lung, to which it was united by adhesions. The tumor mass cut with the resistance of fibrous tissue. It was of a glistening, grayish-white appearance, and fibrous bands ran throughout its substance. The lung was crepitant throughout. No nodules felt in its substance. On section a viscid fluid exuded from the alveoli, but no marked pathologic change was noted. The left pleura was also adherent, but less firmly than the right. A few nodular masses found about region of left bronchus, but none comparable in size to those of right. While removing the lung it was thought that one of these small nodules ruptured, a small quantity of thick, grayish pus escaping. It was, however, impossible to identify the nodule from whence this came, after the organ had been removed.

The abdomen contained a small quantity of straw-colored fluid. Mesenteric glands not enlarged. The stomach and intestines were not removed, but no pathologic change was noted in their

external appearance. The liver was very little, if at all, enlarged. It was paler, and somewhat softer than normal. No nodules could be felt on its surface or throughout its substance. Gall bladder normal. The spleen was enlarged to at least three or perhaps four times its normal size, and was united to adjacent structures by a few delicate adhesions. The capsule showed a few patches of perisplenitis. The organ was very firm, and scattered over its surface were smooth, rounded prominences, the largest about the size of an English walnut. Other nodules could be palpated throughout its substance. These nodules were very firm. The organ cut with considerable resistance, and was much drier than normal. Section through a nodule showed in its center tissue resembling scar tissue, from which finer bands radiated throughout the splenic pulp.

I am greatly indebted to Dr. D. C. Mayes, of Clifton, Va., for his assistance in performing the autopsy and for his aid in collaborating data embodied in the history. It is regretted that circumstances were such that a more thorough study of the case could not be made.

Dr. James Carroll, U. S. Army, Curator of the Army Medical Museum, reported that the microscopical appearances of sections from the spleen were very unusual and not at all like the changes found in tuberculosis as usually seen ; still it was very difficult to say that tuberculosis was excluded, and the picture was not a typical one of Hodgkin's disease as we know it. Taking into consideration the history, and the fact that there is some microscopic evidence of caseation, it seems fair to conclude that the mass of enlarged bronchial glands is the seat of tuberculosis rather than of Hodgkin's disease. Dr. Carroll hesitated to express a positive opinion, and would prefer to retain the specimen under a provisional diagnosis until the matter could be further cleared up, if it was possible to do so.

Dr. D. S. Lamb said that it was unfortunate that the exact diagnosis of Dr. Groover's case had not been made. To Dr. Lamb it seemed as if tuberculosis offered the most satisfactory solution of the question ; although the spleen looked more like Hodgkin's disease than anything else. His own inclination would be to call the case one of Hodgkin's disease, but the clinical history did not show the course followed by that affection. It must have been either tuberculous adenitis or Hodgkin's disease.

Dr. Anne Wilson asked if hyperleucocytosis had been observed. This was frequently the case in Hodgkin's disease, particularly an increase in the number of lymphocytes. Was the tuberculin test made?

Dr. Groover said that the tuberculin test was not made, and that the limited facilities of the country practitioner made blood counts impossible to obtain. From the appearance of fresh specimens of blood under the microscope, he was inclined to think that the leucocytes were not increased in number. The relative percentages of the colorless elements were practically normal.

Early writers would certainly have classed this case as one of Hodgkin's disease; but later investigations have shown that many of these so-called cases were really cases of tuberculosis or lymphosarcoma. Tuberculosis cannot be excluded in his case, and therefore he hesitated to express an opinion as to the diagnosis.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, October 31, 1906.—Dr. Jas. Dudley Morgan, President, in the chair; about 90 members present.

Dr. D. S. Lamb reported the following cases with specimens:

(1) Invagination of the intestine in an infant;
(2) Strangulated Inguinal Hernia;
(3) Dissecting Aneurism of Aorta.

Invagination of Bowel.—From a girl of three years. She was admitted to hospital Oct. 2, 1906, with symptoms of obstruction of bowel, and died next day. The child was well nourished and with the exception of the invagination had no disorder. There was some hypostatic congestion of the lungs. A few small ecchymoses in the mucous membrane of the stomach suggested that severe vomiting had occurred. The invagination involved the ileum, and completely obstructed the bowel. There was no distention above this point, the bowel apparently having relieved itself of its contents by the vomiting. The large intestine was normal except for marked flatulent distention in the sigmoid flexure and rectum. Of course an operation might have been performed in this case, provided the parents had been willing; but the outlook was certainly very discouraging.

Dr. Reyburn said that Dr. Lamb's case recalled one which he had relieved by very simple means about eighteen months ago. The child was older than the one from which Dr. Lamb's specimen was taken and the invagination was lower down. After Dr. Reyburn had failed to reduce it by the ordinary means, a very

simple procedure suggested itself: a fountain of plain soda-water was opened without allowing the gas to escape; then holding the tube of the fountain in close apposition to the anus the gas was allowed to escape into the rectum. The bowel was at once distended and the invaginated portion released. The child made a very good recovery, but Dr. Reyburn heard later that a second accident of the same kind had occurred to which the child succumbed.

Strangulated Inguinal Hernia.—From a colored man, age 21, laborer, who stated that "he had always been constipated." The hernial swelling appeared in 1902, and whenever he was constipated for a week or two, having no stool during that time, the swelling enlarged. Oct. 2, 1906, it again became enlarged and was very tender; he went to some doctor who, mistaking it for an abscess, cut into it. The man was admitted to hospital Oct. 9 and died Oct. 11.

The post-mortem showed a well nourished body. The lungs were normal except for some recent lymph on the lower edge of the left lung. The heart was normal as also were the liver and spleen. The stomach and small intestine were distended with gas and fluid feces and the peritoneum of the small intestine was hyperemic.

The lower end of the ileum, close by the caecum, showed a loop of intestine with its mesentery incarcerated in the right inguinal canal and strangulated there, with firm old adhesions to the wall of the canal. The incision made during life had opened the intestine to the diameter of one-eighth inch; part of the involved intestine was quite dark, apparently incipient gangrene. Presumably the man died from shock. The hernia could, of course, have been relieved by operation.

Dissecting Aneurism of the Arch of the Aorta.—From a well nourished colored man, age 62. His parents died of senile debility; he had one brother living, and fairly well, age 74. The patient was admitted to hospital, Oct. 19, 1906, with ulcerating gummata around the anus which he had had for months; he had also sores on the lips and gums; no urinary trouble. Temperature 100 when admitted but soon fell to 98. He fell out of bed on the 21st, and died.

The post mortem showed an old scar at the margin of the meatus urethrae. The lungs were normal except for old adhesions; stomach and intestines appeared normal, not opened; liver dark; spleen small, friable; kidneys showed senile atrophy and cysts; bladder normal; prostate somewhat enlarged.

The heart was much enlarged and dilated; the coronary arteries and aortic valve atheromatous. The arch of the aorta was also markedly atheromatous and its coats brittle; one inch above the aortic valve was a complete transverse rupture involving, as usual, the inner and middle coats, the blood finding its way between

these and the adventitia and breaking through the latter, opposite the transverse laceration, into the pericardium, which was found full of fluid and clotted blood. The blood also made its way subpericardially around the pulmonary artery and other tissues.

The history and post mortem findings in this case seem to leave no doubt that the case was one of tertiary syphilis ; and the fatal rupture and hemorrhage were due to the syphilitic endarteritis. Whether the rupture occurred from the fall from the bed or preceded it is uncertain.

Dr. Pickford presented a specimen of Meningocele.

Dr. R. S. Lamb exhibited a Würdemann's lamp.

Gen. Sternberg made the address for the evening. Subject: "The first fifty cases of tuberculosis of the lungs treated at the Starmont Sanitorium." Discussed by Drs. Ramsburgh, I. H. Lamb, Randolph, Kober, Reyburn, J. D. Thomas and R. S. Lamb. See p. 337.

Wednesday, November 7.—Dr. Morgan, President, in the chair ; about 80 members present.

The Chair announced the death of Dr. D. H. Hazen and appointed Drs. Bovée, Kober and Holden a committee to report suitable resolutions.

Dr. Wellington reported a case of Meningocele, with operation, and showed the patient and specimen. Discussed by Drs. D. S. Lamb and Vaughan. **Dr. Vaughan** said that this was a very interesting case, especially as the child seemed to be in such good condition ; such cases usually die. He asked if compression had been attempted as a cure in this case ; it seemed to be one to which compression was adaptable. This method is worthy of trial, but must be discontinued at once if symptoms of compression of the brain appear. He hoped that the progress of the case would be reported, as the question of recurrence is of interest, and there seemed to be a slight tumor in the occipital region.

Dr. G. Brown Miller read the paper for the evening. Subject: "Postoperative complications involving the urinary tract." Discussed by Drs. Vaughan and I. S. Stone. See p. 351.

Dr. C. S. White reported a case of Typhoid Fever with Perforation, Operation and Recovery. Discussed by Drs. Lochboehler, Claytor, E. B. Behrend, S. Ruffin, I. S. Stone, S. S. Adams and Vaughan. See p. 361.

Wednesday, November 14.—Dr. Morgan, President, in the chair ; about 50 members present.

Dr. Bovée, Chairman of the Committee on Resolutions on the death of Dr. D. H. Hazen, read the report for that Committee, which was accepted and the following resolutions adopted.

WHEREAS it has pleased an overruling Providence to remove

from our midst Dr. David H. Hazen, one of the ablest members of the Medical Society, be it

Resolved, That by the demise of Dr. Hazen the Medical Profession has lost one of its most useful, conscientious and best known members, one who was conspicuous for his faithful devotion to duty and who enjoyed, in consequence, the confidence and respect of his numerous patients.

Resolved, That the community has lost a public spirited citizen, because Dr. Hazen, in addition to his engrossing professional duties, found time to devote to the subject of Public Schools, an example well worthy of our emulation.

Resolved, That we extend to the family of our lamented member our heartfelt sympathy in this hour of their great bereavement, and that a copy of this Memorial be likewise transmitted and spread upon the minutes.

Signed by J. Wesley Bovée,
Geo. M. Kober,
R. T. Holden, *Committee.*

Dr. D. H. Hazen was born in 1846, in Upper Mount Bethel, Northampton County, Pa. At the age of sixteen he entered Belvidere Academy, Belvidere, N. J. Later he taught school in order to return and finish his education at the academy. After having finished his studies, he came to Washington, D. C., where he matriculated at the medical department of Georgetown University, graduating with high honors in 1873. He served as the resident physician at the Washington Asylum Hospital for two years, and for a time was resident physician at the Naval Hospital.

He was appointed physician to the poor, for the Southwestern section of the city, by Governor Shepherd, and held this position for three years. Afterwards he was appointed a contract surgeon of the army at the Washington Arsenal, and served in this capacity for four years. Resigning this position, Dr. Hazen devoted his entire time to his private practice, which became large and remunerative. He was a reliable friend, and very lovable man, and was very popular among his fellow practitioners and patients.

Although his time was always much taken up with the duties of his profession, he was public spirited, and served as a member of the Board of Education of the District of Columbia from 1890 to 1900, taking a very active part in inaugurating many improvements in the existing educational systems.

He was a member of the Medical Association and Medical Society of the District of Columbia, the American Medical Association, and the Board of Trade of our city.

Dr. Hazen leaves a wife, who was Miss Emma Louise Honeyman, and one son, Dr. Henry H. Hazen, who graduated at the Johns Hopkins Medical School last Spring and is now connected with the hospital at that institution. Dr. W. P. C. Hazen of this city is a brother.

The Committee on the "Reed" Memorial made a further request for contributions.

Dr. S. S. Adams announced the serious illness of Dr. J. Ford Thompson, in London, and the Corresponding Secretary was instructed to send a message by cable to Dr. Thompson conveying the sympathy of the Society and its earnest hope for his speedy and safe return to his native land and to his family.

Dr. Bovée presented a specimen of Ovarian Tumor.

Dr. Reyburn read the paper for the evening. Subject: "The Sanitary Condition and Hospitals of the City of Mexico." Discussed by Dr. Keech.

Wednesday, November 21.—Dr. Morgan, President, in the chair; about 75 members present.

The Chair announced the death of Dr. John Walter and appointed Drs. H. H. Barker, G. Wythe Cook and G. Lloyd Magruder a committee to report resolutions of respect.

Dr. S. S. Adams moved that 1,000 copies of the history of the Society be printed in a manner satisfactory to the Committee and at the most economical rate. Seconded by Dr. Kober.

An appropriation of $150.17 for printing the ANNALS was granted.

Dr. W. L. Robins read a paper entitled: "Friedreich's Disease; Report of a Case, with a clinical digest of 100 cases." He presented the patient. Discussed by Drs. W. A. White, S. S. Adams, Randolph, Bishop, S. Ruffin, Acker, Griffith and Fremont-Smith. See p. 378.

Dr. C. Norman Howard read: "A partial review of Internal Medicine." Discussed by Drs. S. Ruffin, Briggs, S. S. Adams, Macatee and E. L. Morgan. See p. 365.

Wednesday, November 28.—Dr. Morgan, President, in the chair; about 85 members present.

The Chair announced the receipt of photographs for use in the History of the Society. Of special interest were the following: of Dr. Benj. Bohrer, Corresponding Secretary of the Society in 1823, presented by Dr. Yarnall; of Dr. Jno. Thomas Shaaff, presented by Mr. Arthur T. Brice; and of Dr. Wm. Thornton, Vice President of the Society, 1820–1823, and Architect of the U. S. Capitol, presented by Mr. Glenn Brown, the present Architect of the Capitol.

The motion of Dr. S. S. Adams to authorize the Committee on History of the Society to have printed 1,000 copies of the history in a manner satisfactory to the Committee and at the most economical rate came up for consideration. Dr. Chappell renewed the motion and suggested that the Committee be empowered to expend $1,000, and as much more as may be necessary, to pub-

lish a full volume with illustrations. Dr. Adams' motion was then carried.

Dr. Groover reported a case and presented specimens of Enlarged Bronchial Glands and Splenic Tumor simulating Hodgkin's Disease. Discussed by Drs. D. S. Lamb and Anne Wilson. See p. 402.

Dr. I. S. Stone reported a case of Nephrectomy, with specimen. See p. 394.

Dr. E. E. Richardson reported a case of Cerebro-spinal Meningitis. See p. 391.

Dr. Deale read the essay for the evening. Subject: "Pneumococcus Infection." Discussed by Drs. D. S. Lamb, C. W. Brown, Frank Leech, Kober, Nichols, Borden, J. D. Thomas, E. C. Prentiss, Chappell and Mackall.

Wednesday, December 5.—Dr. Morgan, President, in the chair; about 95 members present.

The Chair announced the death of Dr. A. B. Storch and appointed Drs. D. Olin Leech, H. S. Medford, and Jesse Shoup a committee to report suitable resolutions of respect.

The Chair also announced the following Essayists and Reviewers for 1907:

Essayists.—Jan., Dr. Frank Fremont-Smith. Feb., Dr. V. B. Jackson. Mar., Dr. A. L. Stavely. Apr., Dr. John B. Briggs. May, Dr. Anne A. Wilson. Oct., Dr. Edward E. Morse. Nov., Dr. Jas. F. Mitchell. Dec., Dr. Joseph S. Wall.

Reviewers.—Dr. Norwood Suter, Ophthalmology. Dr. Edwin B. Behrend, Pathology and Bacteriology. Dr. A. B. Bennett, Jr., Laryngology. Dr. J. Thos. Kelley, Jr., Gynecology. Dr. L. B. T. Johnson, Pediatrics. Dr. Chas. H. Clark, Nervous Diseases. Dr. W. W. Wilkinson, Internal Medicine. Dr. Truman Abbe, Surgery.

On motion, the Executive Committee was directed to make efforts to secure better accommodations for the Society, and to report in January. Also to appear before the Committee on Medical Legislation of the A. M. A. and unite in opposition to the Osteopath bill.

Dr. Magruder submitted the following resolution, which was unanimously adopted: That the Executive Committee be directed to aid in the establishment of a Bacteriological Laboratory for the Health Officer of the District of Columbia, in order that modern scientific methods of examinations of the milk and water supply of the city may be secured.

Dr. Sowers, for the Executive Committee, reported as to action already taken in opposition to the Osteopath bill.

Dr. E. P. Magruder reported a case of Aortic Regurgitation with Floating Liver; the patient was presented. See p. 395.

Dr. Wells read the essay for the evening. Subject: "Remarks

upon Diphtheria, Croup and Allied Conditions with special reference to Intubation." Discussed by Drs. Chappell, Shute, Frank Leech, C. W. Richardson and Jas. Stuart.

Wednesday, December 12.—Dr. Morgan, President, in the chair; about 100 members and many guests present.

Dr. C. A. L. Reed, of Cincinnati, Chairman of Council on Medical Legislation of the American Medical Association, was introduced; he outlined the work to be done by the Council and urged attendance of the profession at its meetings.

Dr. Morgan delivered the Presidential address: "The Combat between Scientific Medicine and Superstition." Discussed by Gen. Forwood, Dr. Kober, Gen. Sternberg, Drs. Shute, Nichols and Lochboehler. See p. 325.

A vote of thanks was given Dr. Morgan for his address.

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Walter A. Wells, M. D., ... "The Rochambeau."
Murray Galt Motter, A. M., M. D., . . . 1841 Summit Place.

Editorial.

Photographs of Members.—The following additional photographs have been received, making 251 in all to date. So far six groups of eight have been engraved.

Adams, J. L.	Biscoe, F. L.	Burnett, S. M.
Anderson, C. L. G.	Bogan, S. W.	Burton, G. C.
Aulick, R. V.	Bohrer, Benj.	Busey, S. C.
Barnes, N. P.	Bowen, C. H.	Callan, C. V. N.
Barrie, George	Brackett, J. E.	Chamberlin, J. M.
Battle, L. J.	Bradfield, J. D.	Chappell, J. W.
Beale, J. S.	Brooks, F. V.	Coumbe, O. H.
Beale, R. S.	Brown, Bedford	Dillenbach, W. J.
Behrend, A.	Brown, C. W.	Dufour, C. R.
Behrend, E. B.	Brumbaugh, G. M.	Emory, Thomas

Farquhar, R. R.
Fowler, H. A.
Frankland, W. A.
Franzoni, C. W.
Fry, H. D.
Hammond, T. V.
Harrison, G. B.
Hazen, D. H.
Henderson, Geo.
Herbert, J. W.
Howard, C. N.
Hunt, A. L.
Hyde, C. W.
Karpeles, S. R.
Kemble, Adam
Kerr, James
King, A. F. A.
King, E. F.
Kolipinski, L.
Lamb, R. S.
Lee, T. V.
Loring, F. B.
Lovejoy, J. W. H.
Luckett, L. F.
Luckett, W. F.
McLain, J. S.
McLaughlin, T. N.
McNally, V.
Macatee, H. C.
Maddox, W. R.
Magruder, E. P.
Middleton, H. P.
Middleton, J. V. D.
Morgan, W. G.
Morris, G. G.
Motter, M. G.
Muncaster, O. M.
Murray, J. D.
Nalley, C. V.
Nevitt, J. R.
Nicholson, Wm.
Owens, S. L.
Parsons, M. A.
Palmer, G. S.
Palmer, W. G.
Petteys, C. V.
Pickford, E. F.
Radcliffe, S. J.
Rice, G. L.
Richey, S. O.
Ritchie, S. A.
Ritchie, L. W.
Roberts, J. M.
Roberts, W. E.
Roman, F. O.
Savage, L. S.
Shaaff, J. T.
Shute, D. K.
Steltz, P. H.
Stone, C. G.
Street, D. B.
Stromberger, H. H.
Suter, H.
Tarkington, J. A.
Tayler-Jones, L.
Thomas, A. R.
Thornton, Wm.
Toner, J. E.
Van Vliet, F. C.
Walter, John
Wells, W. A.
Wilson, A. A.
Woodbury, H. E.
Yarnall, J. H.
Yates, Fred
Zevely, E. A.

Neither the Medical Society nor the Historical Committee has any agreement with any photographer as to photographing the members of the Society.

Dr. J. Ford Thompson has returned to Washington and is residing at 1604 Nineteenth Street. As is well known, he went abroad in October for an indefinite stay. In November his condition became such that an operation was deemed necessary for the saving of his life.

Mr. Mayo Robson, the famous London surgeon, did a gastro-enterostomy which has given Dr. Thompson very great relief. He eats well, sleeps well and looks well. He hopes that he will soon be able to attend the meetings of the Medical Society.

A BACTERIOLOGICAL LABORATORY FOR THE HEALTH OFFICE.

The necessity for a Bacteriological Laboratory for the Health Officer of the District of Columbia is evident from the fact that vital questions daily arise requiring the use of the same. Whilst it is true that from time to time important investigations have been made by the National Departmental Laboratories in response to requests from the District Commissioners, it is well known, that it is almost impossible to uniformly secure immediate responses to such requests. Necessarily when such requests are made, the authorities feel bound to make their replies complete and exhaustive. Hence frequently much time is required for such answers. As an illustration, the Commissioners at this date have not yet received the reply to their letter dated June 21, 1906, asking the Bureau of Public Health and Marine Hospital Service to co-operate in solving the cause of the continued prevalence of tyhoid fever, nor have they yet received the reply from the Department of Agriculture in regard to certain requests re-recently made. It is true that both reports will soon be forthcoming. There is no doubt but that they will be documents of great value and will most forcibly show the desirability of having a well-equipped laboratory directly under the control of the Health Officer of the city.

From observations made this summer and autumn the value of such a laboratory was conclusively shown.

Notwithstanding the admirable efficiency of the filtration plant, typhoid fever has prevailed to a greater extent than the year before. This was so marked during August and September that the press teemed with communications attacking the efficiency of the filtration plant, and letters were received advising persons to leave the city. Having carefully studied the splendid results of the bacteriological tests made at the filtration plant of the effluent and tap water, it is clear that there were other causes than the Potomac water for the existing conditions. In the report of the Health Officer for 1895 it is stated that Dr. Kinyoun examined bacteriologically the water supply from only six dairy farms. In four out of these six intestinal bacilli were found. Since that date it has been the practice of the Health Officer, on account of the limited force under his control, to make analyses of the water

supply of these dairy farms only on which the conditions were suspicious. As shown by his report for 1903–4, the water supply of 46 dairy farms was examined, 20 were good, 4 were suspicious and 22 were condemned as unfit for use. In 1904–5, 75 were examined, 46 were good, 4 were suspicious, and 25 were condemned. From April 1 to August 1 of this year, 28 were examined and 10 were condemned.

From these reports the deduction can be clearly made that, owing to this marked contamination of the water supplies of the dairy farms, the milk supply is a much more important factor in producing typhoid fever and other diseases than has heretofore been conceded. This contamination of the milk is brought about through the use of the water for the washing of the utensils employed in the handling of the dairy products. It is well known that milk is one of the very best media for the growth of bacteria. The fact that the milk in transportation to the city is exposed for hours to the high temperatures of the summer season greatly augments the danger of infection by increasing the bacterial growth.

In a letter to the Commissioners early in September their attention was called to these facts in regard to the high efficiency of the filtration plant, as well as the great danger from the milk supply. A more rigid inspection of the 900 farms from which milk is sent to the city was suggested and the establishment of a bacteriological laboratory was urged, as well as the appointment of additional inspectors.

A few days later these observations were submitted to the Secretary of Agriculture. The Secretary was so impressed with the views expressed that he suggested a conference with some of the scientists of his department. As a result of this conference, it was decided, with a view of ascertaining whether the attacks in the press against the water supply were justifiable, to conduct a series of check experiments, which were to be carried on by the Department of Agriculture and those in charge of the filtration plant.

It was agreed to go day by day and secure samples of the effluent water, as well as water from the taps from different points in the District, exchange media and compare bacterial counts. These investigations were carried on until near the end

of November. This work confirmed the excellent results that had been formerly obtained at the laboratory at the filtration plant.

The Secretary of Agriculture authorized me to say to the Commissioners that his Department would gladly aid in any further investigations. After a conference with General Wilson, the President of the Board of Trade, and Dr. Hickling and some members of the Committee on Public Health of the Board of Trade, and the Health Officer, it was determined that it would be eminently desirable to supplement the investigation of the Bureau of Public Health and Marine Hospital Service by an investigation of the dairy farms in the District, Maryland and Virginia, with a view to securing a more definite idea of their actual conditions as well as the condition of their water supplies.

The Commissioners availed themselves of the offer of the Secretary of Agriculture to do this work and to continue the bacteriological examination of samples of milk. The partial report which will be submitted in a few days will show a most startling state of affairs. Not only are many of the farms wanting in sanitary requirements, but the analyses of the water supplies show that an enormous percentage of them is badly contaminated. Of those examined 40 per cent. showed the presence of the colon bacillus and 75 per cent. gave fermentation ; 57 per cent. contained more than 500 bacteria to the cubic centimeter. These were not selected farms. The examinations were made just as the farms were visited during the month of November. This work has proved so interesting that the Department hopes to continue it until every farm shall have been visited.

In the meantime it is imperative that the cases that daily arise, giving cause for suspicion, should be investigated immediately by the Health Officer. Therefore it is to be hoped that Congress will give the Commissioners authority to instal this laboratory at once, without waiting for the beginning of the fiscal year. Without this laboratory the Health Officer will still have to pursue the antiquated methods that have long since been abandoned, even in many small towns.

Adequate funds should be provided so as to secure a competent director and assistants, as well as the most approved equipment.

G. Lloyd Magruder.

TUBERCULOSIS REGISTRATION.

The District officials have accepted the bill for registration of consumptives proposed by the Associated Charities Committee on the Prevention of Consumption, and rejected that proposed jointly by a two-thirds vote of the Medical Society and a unanimous vote of the Homeopathic Society.

The objects aimed at in the project are highly meritorious, and in opposing certain features of it the medical profession is in a way put on the defensive as to its motives and its judgment; thus affording an opportunity for spiteful sneers at the profession of which oracular philanthropists have not hesitated to take advantage.

The medical profession of Washington, however, challenges any imputation as to its altruistic spirit and sense of public duty. Its self-sacrificing record for practical charity and toward municipal sanitation is clear, and it needs no instruction in its civic duty from any professional philanthropists.

Its practical training and personal intimacy with the tuberculosis situation would seem to make the medical profession the natural experts and best qualified judges as to the utility of the registration measures proposed. Some of the most strenuous agitators for these measures, however good their intentions may be, are, so far as practical knowledge of sanitation or of tuberculosis goes, the merest amateurs and dilettanti. Having no knowledge or opinions of their own, they with great assiduity collect and parade expressions of opinion from all whom they can find favoring their views—chiefly health officers imbued with an excessive sense of official power and importance or seeking aggrandizement of their functions. The least really critical consideration of this mass of second-hand opinions shows their emptiness, since while very voluble as to numbers of cases reported, circulars distributed, specimens of sputum examined, etc.—all subsidiary means to an end—the vital and essential point of all, the prevention of tuberculosis, is entirely overlooked, and no evidence whatever is presented that these measures have ever prevented a single case of consumption. Of real results, on which alone the efficacy of registration can be estimated, these statements are painfully void. Yet the second-hand opinions, flamboyant assertions, and roseate promises of these amateur sanitarians and hysterical agitators

threaten to carry more weight than the sober and expert, though less spectacular, judgment of the medical profession.

Stripped of glittering generalities and vague sophistries, the main actual working features of the registration law proposed for Washington are: (1) the compulsory reporting of all cases of pulmonary tuberculosis; (2) the sending of circulars of instruction by the health officer to all such patients, unless otherwise directed by the attending physicians; (3) the free examination of sputum for all persons irrespective of their ability to pay; and (4) obligatory disinfection of apartments after vacation by tuberculous patients.

All are agreed on the advisability of disinfection of apartments, though little impression on the aggregate incidence of tuberculosis is expected from it; this measure requires a distinct notification system, and is really entirely independent of the registration project.

Absolutely all that registration actually leads to is the distribution of circulars. Practical physicians know well that it requires persistent and patient personal effort to train the tuberculous patient and his entourage in the proper sanitary management of the case. This point was brought out in General Sternberg's recent report on the results attained at the Starmont Sanatorium. Cases of tuberculosis can be effectively treated only by the close personal supervision of the medical attendant. Health officers have no wholesale therapeutic resources that can take the place of personal care; certainly the distribution of circulars can accomplish but insignificant results.

The impotence of health-office methods in dealing with tuberculosis is shown not only by *a priori* considerations, but also by the lack of results in the cities which have given it a trial. In New York there has been no greater decline in the death rate from pulmonary tuberculosis since registration was instituted there in 1894–'97, than has taken place in the same period in the District of Columbia or in the country at large. In some cities in which the system has been put in operation there has since been a marked decrease of tuberculosis; in others there has been an equally marked increase. Similar increases and decreases can be found in other cities that do not have registration. The fluctuations in the mortality are obviously entirely uninfluenced by municipal measures, and the statistics furnish no evidence that

the registration measures are capable of having any perceptible effect whatever in reducing tuberculosis; on the contrary, the failure and impotence of the system are indicated.

While useless and inefficient, the scheme embodies pernicious bureaucratic and paternalistic features that are instinctively objected to by practical physicians. It imposes espionage, supervision and restrictions on the public and the profession, which, if productive of no compensating benefit, should not be tolerated by a people with the Anglo-Saxon instincts of freedom. The old principle that that country is best governed that is least governed, is nowadays seemingly obsolete. We deplore the bureaucratic despotism of Russia; we are rapidly drifting to the same condition ourselves. Municipal governments attempt to regulate individual conduct and restrict personal activities down to the smallest detail. Citizens and business men are kept in a constant state of irritation and exasperation at the elaborate red tape, vexatious delays and arbitrary obstacles interposed in the management of their private affairs. Cases are brought into courts of so trifling a character that judges dismiss them with disgust. The statute books are cumbered with numberless ordinances, which, enacted under the stress of some transient fad or hysterical influence, on trial are found useless, but which, once enacted, are rarely repealed. The claim that such ordinances constitute no material burden will not hold; there is a principle involved, that of interference with personal liberty, that has repeatedly caused wars and revolutions. Nor can it be said that even the slightest restriction of individual freedom is unfraught with the possibility of peril to the individual; since we now have as an instance the recent case in this city of Colson, whose death (December 4, 1906) resulted directly from so insignificant an offense as spitting on the sidewalk.

Another characteristic manifestion of the bureaucratic spirit is shown in the inclination to impose extravagant penalties, out of all proportion to the offense or to the public benefits obtainable. This is instanced in the Allee bill, and the bill for reporting cases of chickenpox, measles, etc., by the monstrous penalties proposed and the extraordinary legal procedure, planned to make convictions easy, whereby an accused physician is practically presumed to be guilty unless he can prove his innocence. This is styled "administrative efficiency"; but when carried to excess adminis-

trative efficiency becomes tyranny, and those who propose these penalties forget that laws and administrations exist for the benefit of the people, and not the community for the benefit of administrations.

The free examination of sputum for persons able to pay therefor is socialism, pure and simple, and is not at all necessary to the registration scheme. It is an example of a strong paternalistic tendency in the policy of public health departments. In New York and other large cities, in addition to laboratory examinations, the health officers claim and exercise the right to provide free vaccination, free intubation, free injection of antitoxin, free consultants in all infectious cases, free eye, ear, nose, throat and skin treatment for children, etc., for any and all without reference to their ability to pay. There is a strong drift to municipal assumption of care of children generally, by providing free food, free baths, free nurses and free medical treatment. It is also proposed to provide free public obstetricians, to encourage procreation and discourage race suicide. At this rate, the paternalization of all medical practice seems impending ; and certainly no arguments can be offered for the paternalization of any branch of medical work that does not equally well apply to the whole. It is worth while for physicians to sit up and take notice of this tendency ; and if they are opposed to medical socialism, to the organization of the entire community into a universal lodge practice, it behooves the profession unitedly to oppose every attempted encroachment of the municipality on the field of private practice.

The bill proposed by the two medical societies for tuberculosis registration will accomplish exactly the same practical results as that advocated by the Associated Charities, and at the same time eliminate and minimize the pernicious bureaucratic and paternalistic features. It provides for the reporting and disinfection of apartments vacated by tuberculous patients ; for the examination of sputum for persons unable to pay therefor ; for the registration of all indigent cases and the optional registration of any cases in which the reporting physician desires whatever aid or service the health office can render. The indigent cases are those most needing public aid. Precisely the same cases will be brought under the cognizance of the health office by both bills ; in the more drastic bill the health office, although confidentially notified of all cases, is permitted to take action only in such cases as the

reporting physicians desire ; and precisely the latter cases would be reported under the medical societies' bill.

To the objection of class legislation and discrimination, it is to be observed that the distinction made as to those required to be reported or for whom free sputum examination is to be afforded, is one that is perfectly feasible and unobjectionable. The same distinction is now made in the provisions for the physicians to the poor, the support of indigent persons in the almshouse and charity hospital wards, and in all the operations of the Board of Charities; and this distinction is one that of right and in justice to the interests of the medical profession ought to be made.

LOUIS MACKALL.

REGISTRATION OF TUBERCULOUS CASES.—In 1889 the writer read before the Medical Society of the District of Columbia a paper on the etiology and prevention of tuberculosis, and emphasized the following points: 1. Tuberculosis is an infectious disease transmissible under certain favorable conditions to healthy individuals. 2. The habitation of consumptives as well as their personal effects, unless immediate disinfection has been practiced, are infected houses and objects, liable to convey the disease to subsequent occupants. 3. Notice by householders or physicians to the health authorities as soon as the disease is recognized should be made compulsory. 4. Disinfection of all houses in which tuberculosis has occurred, also disinfection of hotel rooms, sleeping-car and steamer berths occupied by consumptives, should be made compulsory. Other preventive measures involving the disinfection of sputum, personal effects, eating and drinking utensils, the segregation of consumptives in hospitals, asylums, prisons, and in the home, as well as the encouragement of treatment in special hospitals, were presented. An interval of seventeen years has not modified the views of the writer, except to strengthen his conviction that on account of the terrible ravages of the disease which science has declared to be communicable and preventable, no reasonable effort should be spared to limit its spread and ultimately stamp it out. No one at all familiar with the predisposing causes of tuberculosis questions the importance of improving the power of resistance of the individual and thus lessen the chances of infection with the ubiquitous tubercle bacillus, but the writer is not disposed to believe "that it is a disease

pre-eminently of the weak and inferior and through it the weaklings and unfit are eliminated." We have simply to recall the peculiar susceptibility to this disease developed after an attack of measles or whooping-cough to appreciate that this predisposition may be temporarily acquired. The writer has in mind several cases of tuberculosis which developed successively in three internes in one of the local hospitals; their broken rest lowered their vitality, but if there had been no room and bed infection they would probably not have contracted the disease. The opponents of compulsory notification admit very generally the wisdom of such a course in scarlet fever, diphtheria and smallpox. If there is a necessity for official control in this group, there is even more reason for endeavoring to limit the ravages of consumption, which during the census year of 1900, carried off 109,750 victims, while only 3,484 perished from smallpox, and the deaths from diphtheria, scarlet fever and smallpox combined were less than one-third the number of deaths from tuberculosis. During the 17th century, according to Professor Niemeyer, one-tenth of the population, or about 400,000 persons, died of smallpox every year in Europe; another tenth was disfigured by the disease. Scarcely any one now questions the good effects of compulsory vaccination and other preventive measures in smallpox, which in the 17th century must have appeared as much of a hopeless problem as does the widespread prevalence of tuberculosis today. As a matter of fact, preventive medicine, by the application of scientific truths, has lengthened the average span of life from 18 years in the 16th century to over 40 years in the 19th century, and the average life since 1880 has been lengthened about six years.

The advocates of compulsory notification are aware of a marked decrease in the prevalence of consumption, amounting in some cities to from 36 to 49 per cent., after they had been sewered and the soil consequently drained and air pollution prevented, and that for like reasons the death rate from this disease in Washington has fallen from 4.20 in 1880 to 2.62 in 1904, in spite of the absence of a compulsory notification system. No one claims that the enactment of such a law is the most important step, but it is justly believed that it is the first and most essential step towards locating the sources of infection, and when these have been officially determined they can be controlled by the methods recommended by sanitarians.

The general principles underlying notifications and disinfection appear to be conceded by the opponents of progressive legislation, but they would limit such control to the indigent classes and cases in institutions. Why make such distinctions? The cases in institutions are already subject to more or less efficient official control. There is no reason for assuming that the well-to-do patients are more prudent in safeguarding the interests of others, and the physician in charge of a rich patient cannot lay claim by that fact alone to possess superior judgment in the management and control of such cases. Apart from this it seems most unjust to enact legislation with special reference to our worthy poor, the majority of whom possess at least equal intelligence and perhaps even a higher regard for the rights and health of others in carrying out preventive measures. And, finally, why should the attending physician be called upon to decide the financial status of a patient, which would lead to endless embarrassment and invidious distinctions subject to the severest forms of resentment on the part of the patient. Moreover, the very rare instances of hardship resulting from a lack of tact on the part of health inspectors were limited to the poor, who would not fall such easy prey to ignorance and prejudice when the law applies to all classes. Much opposition has been evinced to the clause of the Bill providing for the free examination of sputum. The writer is not in a position to know how widespread this opposition is in the rank and file of the profession, and is even willing to agree with Dr. Nichols that "free sputum examination (except for the poor) is not essential to the ends to be gained by registration measures." On the other hand, it is only fair to the advocates of this measure to sum up what appear to be distinct advantages in favor of such a course for all classes. 1. The procedure will encourage an early diagnosis, which is essential to the recovery of the patient and the protection of the household and community. 2. The attending physician has numerous duties imposed upon him by the Health Department in the way of reportable diseases, and it is not unreasonable for him to expect a *quid pro quo* for his time and trouble. 3. The free examination of sputum will relieve the attending physician from embarrassment if patients are opposed to "notification," and because of this fact expect to get the benefit of the doubt. 4. There is no good reason why free sputum examination should

result in paternalism or pauperization. It is permissive, not mandatory. Patients able to pay will not rest content with the examination made at the Health Department, but are likely to insist upon a verification of the findings, and hence it is reasonable to expect an extension rather than a curtailment in the field of scientific aid to an early diagnosis.

While there is room for honest differences of opinion, which the writer respects, he feels that the eradication of preventable disease is the highest aim of scientific medicine today, and that the principles which ought to be carried out, apart from being a matter of conscience should be accepted in a practical sense and embodied in effective laws. Acting upon the lofty principle that the education and betterment of the people in sanitation is not less humane than the healing of the sick, the local profession has heretofore filled the measure of its philanthropy by advocating sanitary laws and thereby lessening its own income, and it is to be deplored that only in this instance has there been a disposition shown not to go quite as far as the 53 out of the 85 largest cities in the Union.

As a member of the Executive Committee the writer reluctantly consented to neither oppose nor advocate the Medical Society's Bill; he appreciates therefore very much and gratefully acknowledges the proffered courtesy of expressing his views in the editorial pages of the ANNALS.—GEORGE M. KOBER.

PERFORATION IN TYPHOID FEVER.—It is desired to learn how many cases of intestinal perforation in typhoid fever in this District have been operated on and with what success. Members are requested to report to Dr. D. S. Lamb the number of such cases that have occurred in their practice, stating whether the patients recovered or not.

THE INDEX MEDICUS.—The Carnegie institution has been bearing the expense of the publication of the new series of the *Index Medicus*. The subscription price is $5.00 a year. A sample copy will be sent to any one writing to "The Carnegie Institution," Washington. The publication is a monthly. The volume for 1905 contains 1,241 pages, and the index to the volume 208 pages. The *Index Medicus* is invaluable and indispensable to any extended research in medicine or the collateral sciences.

The publication of the first series was discontinued for want of support by the medical profession, and it is feared that, unless the present one is better supported than it is, the journal may again be discontinued.

The Memorial to Dr. Walter Reed.—Drs. Cook, Hickling and Reisinger are a committee of the Medical Society having in charge the collection of subscriptions to the Reed Memorial. The committee is anxious that members of the Society who are disposed to contribute and have not already done so should do so at an early date. Dr. Reed was personally known to most of the members and known by reputation to the new members. The proposed memorial is due to Dr. Reed, and the members of the Society who enjoyed his acquaintanceship would do well to take advantage of the opportunity to add to the memorial fund. The trustees of the fund desire to finish their work as soon as possible.

Mississippi Valley Medical Association.—We are requested to state that the annual meeting of the Mississippi Valley Medical Association was held at Hot Springs, Ark., November 6, 7 and 8, 1906. The following officers were elected : President, H. Horace Grant, M. D., Louisville, Ky. First Vice-President, G. A. Hebert, M. D., Hot Springs, Ark. Second Vice-president, T. C. Witherspoon, M. D., St. Louis, Mo. Secretary, Henry Enos Tuley, M. D., re-elected, Louisville, Ky. Treasurer, S. C. Stanton, M. D., re-elected, Chicago, Ill. Columbus, O., was selected as the next place of meeting, during October, 1907. It was voted at this meeting to offer a prize of $100 to members of the Association for the best essay recording some original research work in the Mississippi Valley. A committee of three was appointed who will formulate rules of the contest, which will be published later.

In the November Number of Annals, p. 316, was a review of the recent literature of Tuberculosis of the Kidney, by H. A. Fowler ; a carefully prepared article, and well worth reading.

In the present number is a review of Materia Medica and Therapeutics, by F. P. Morgan, and one by Truman Abbe on "The Scope of the X-ray in Medicine," which are also recommended for careful perusal.

It is hoped that similar short contributions of a very practical character will appear from time to time.

SAN FRANCISCO.

To the Medical profession of the District of Columbia, Virginia, West Virginia and North Carolina :

The medical profession of San Francisco lost its medical library, the San Francisco County Medical Society Library, in the fire last spring. Most of the physicians also lost whatever private libraries they had succeeded in collecting. A committee (named below) has been appointed by the American Medical Association and by the Association of American Physicians to collect and send books to San Francisco, both for the library and for private individuals when duplicate copies are sent on.

Will you send to George M. Kober, 1600 T Street, Washington, D. C., any medical books of value or bound volumes of journals which you can spare? Fairly recent editions of standard text books, foreign text books or bound journals (French, German and Italian) hospital reports, monographs of all sorts, books on special subjects, old classics (*e. g.*, Trousseau, Charcot) and the Sydenham Society publications are especially desired.

Acknowledgment of all that is received will be made through the medical journals, and the books will be packed and shipped as promptly as possible.

Signed : Charles L. Dana, *Chairman*, New York City ; Geo. M. Kober, Washington, D. C. ; Lawrence Litchfield, Pittsburg ; Rudolph Matas, New Orleans ; H. C. Moffitt, San Francisco ; John H. Musser, Philadelphia ; William Osler, Oxford, England ; Henry Sewall, Denver ; C. G. Stockton, Buffalo ; W. S. Thayer, Baltimore ; Frank Billings, Chicago ; E. Bates Block, Atlanta ; J. A. Capps, Chicago ; T. D. Coleman, Augusta, Ga. ; George W. Crile, Cleveland ; W. E. Fischel, St. Louis ; F. Forchheimer, Cincinnati ; Charles L. Greene, St. Paul ; Arthur T. Holbrook, Milwaukee ; R. C. Cabot, Boston, Secretary.

NOTES ON NEW AND UNOFFICIAL REMEDIES.

Under this head we shall, from time to time, publish in brief a list of the articles tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Fuller information as to synonymy, composition, chemical relations, character and manufacture may be found either in the

Journal of The American Medical Association or in the forthcoming annual, "New and Non-Official Remedies."

It is to be understood that the acceptance of an article by the Council does not necessarily mean a recommendation, but that, so far as is known, it complies with the rules adopted by the Council; chief among these are that the articles are non-secret, they are not advertised to the public, and they are believed to be what they are claimed to be. The following notes are, by permission, abstracted from the *Journal of The American Medical Association*. The limited space which we can devote to the subject precludes the use here of the many qualifying statements which may there be found. It must be distinctly understood that the Editorial Committee assumes no responsibility whatsoever for any of the following statements, our purpose being solely to awaken a wider interest in and stimulate further study of these products.

[*Continued from page 308.*]

Iodipin, 25 per cent.—2 to 6 Cc. (30 to 90 minims) hypodermically; also in capsules containing 2 Gm. iodipin 25 per cent.

Iodoformogen.—Iodoform albuminate, liberates iodoform slowly in contact with wound surfaces. Dusting powder, undiluted and with equal parts of boric acid in ozaena.

Iodothyrine.—Similar to Glandulae Thyroideae Siccae, U. S. P. 0.6 to 2 Gm. (10 to 30 grains); children, half this dose.

Isoform Powder.—Germicide and antiseptic. 0.65 to 2 Gm. (10 to 30 grains); also as dusting powder, paste, ointment, etc., to 10 per cent.

Isopral.—As substitute for chloral hydrate. 0.3 to 1 Gm. (5 to 15 grains) in capsules or wafers.

Kasagra.—Aromatic fluidextract of cascara sagrada. 1 to 2 Cc. (15 to 30 minims) q. i. d.

Kola.—Fluidextractum kolae. Contains 23.5 per cent. alcohol. 2 to 4 Cc. (0.5 to 1 fluidrachm) t. i. d.

Kresamine.—Aqueous solution 25 per cent. trikresol and 25 per cent. ethylene-diamine. Only in dilutions (2 to 25); may be applied as ointment. Powerful bactericide, with a decimal minimum of toxicity.

Lac Bismo.—Bismuth hydroxide and subcarbonate suspended in water, 0.16 Gm. (2.5 grains) in 4 Cc. (1 fluidrachm). 4 to 16 Cc. (1 to 4 fluidrachms).

Lactophenin.—Similar to acetphenetidin, more soluble. 0.5 to 1 Gm. (8 to 15 grains) in capsule or wafer.

Laminoids Ferruginous (*Nascent*).—Same as Blaud's pill.

Lennigallol.—Non-poisonous, non-irritating, mild corrosive. Substitute for pyrogallol. 5 to 10 per cent. ointment with zinc oxide.

Liquor Tritici.—1 Cc. (15 minims) = 1.75 Gm. (27 grains) triticum repens in 23.5 per cent. alcholic menstruum. 4 to 16 Cc. (1 to 4 fluidrachms).

Lithium Ichthyol.—Antiseptic and bactericide.

Lycetol.—Diuretic and uric acid solvent (?) 1 to 2 Gm. (15 to 30 grains).

Lysidin.—Diuretic and uric acid solvent (?).

Mercurol.—Organic compound of mercury (10 per cent.) with nucleinic acid from yeast. Bactericide. 0.03 to 0.12 Gm. (0.5 to 2 grains).

Mesotan.—Similar to Ol. Gaultheriae, more irritating; employed diluted with equal volume of Ol. Olivae and without friction.

Methaform.—Name applied to chlorbutanol.

Migrainin.—Antipyrine 85, caffeine 9, citric acid 6. 0.4 to 1 Gm. (6 to 15 grains).

Neurocaine.—Billets of cocaine hydrochloride 0.05 Gm. (1-12 grain) used for pressure anaesthesia or as a local anaesthetic, dental.

Neuronidia.—Elixir of veronal, 8 Cc. (2 fluidrachms) = 0.26 Gm. (4 grains) in 35 per cent. alcoholic menstruum with aromatics. 8 to 16 Cc. (2 to 4 fluidrachms).

Nutrose.—Sodium salt of milk casein, containing 65 per cent. proteids.

Novocaine.—Local anaesthetic, non-irritant, effect not sustained; this may be remedied by simultaneous injecton of suprarenal alkaloid.

Orthoform-new.—Local anaesthetic, non-penetrating, somewhat antiseptic, practically non-toxic. 0.5 to 1.0 Gm. (8 to 15 grains) in emulsion; locally as dusting powder, or with milk sugar for insufflation.

Orthoform-new Hydrochloride.—Action, use and dose as above.

Ovoferrin.—Contains 5 per cent. of an artificial proteid-product in which iron is "masked"; also contains 10 per cent. alcohol and aromatics. 8 to 16 Cc. (2 to 4 fluidrachms).

Oxaphor.—50 per cent. solution of oxycamphor, substitute for morphine, respiratory depressant. 2 to 3 Gm. (30 to 40 grains).

Phenacetin.—Name applied to Acetphenetidin, U. S. P.

Phenocoll hydrochloride.—Antineuralgic and antipyretic similar to acetphenetidin. 0.3 to 1.3 Gm. (5 to 20 grains); hypodermically, 0.25 to 0.5 Gm. (4 to 8 grains).

Phenocoll Salicylate.—Antipyretic, analgesic, antiseptic, antirheumatic. 1 to 2 Gm. (15 to 30 grains).

Pegnin.—Milk sugar rennet. 8 to 10 Gm. (120 to 150 grains) required for 1 liter (34 fluidounces) milk.

Piperazine.—Uric acid solvent (?). 0.3 to 0.6 Gm. (5 to 10 grains).

Pollantin (Fall).—Dunbar's Serum, neutralizes pollen toxin. Instilled into eye and nostril.

Pollantin Powder (Fall).—Used as above.

Purgatin.—Mild laxative. Urine behaves as after ingestion of rhubarb, reddish color and reduces Nylander's reagent. 0.5 to 2 Gm. (7 to 30 grains).

Pyramidon.—Antipyretic and anodyne. 0.3 to 0.4 Gm. (5 to 6 grains).

Pyramidon Neutral Camphorate.—Antipyretic action predominates. 0.5 to 0.75 Gm. (8 to 12 grains).

Pyramidon Acid Camphorate.—Antihydrotic action predominates. 0.75 to 1 Gm. (12 to 15 grains).

Pyramidon Salicylate.—Antipyretic, analgesic, antiseptic. 0.5 to 0.75 Gm. (8 to 12 grains).

Quartonol.—See glycerophosphates.

Sal Ethyl.—Less toxic than salicylates. 3 to 6 Cc. (5 to 10 minims).

Saliformin.—Genito-urinary antiseptic. 0.3 to 2 Gm. (5 to 30 grains).

Salit.—Absorbed by skin, liberating salicylic acid in tissues. Externally only; undilute or with equal parts Ol. Olivae.

Salophen.—Like phenyl salicylate. 0.3 to 1 Gm. (5 to 15 grains).

Saloquinine.—Tasteless substitute for quinine and salicylic acid. 0.5 to 2 Gm. (8 to 30 grains).

Saloquinine Salicylate.—1 Gm. (15 grains).

Sextonol.—See glycerophosphates.

Sidonal.—Normal salt of piperazine and quinic acid. 1 to 1.3 Gm. (15 to 20 grains).

Sodium Cacodylate.—Similar to other arsenic compounds but less toxic. 0.025 to 0.12 Gm. (0.5 to 2 grains).

Sodium Cinnamate.—Anti-phthisic. 0.001 Gm. (1-60 grain) gradually increased to 0.02 Gm. (1-3 grain) in 1 to 5 per cent. solution intravenously thrice weekly for long periods (3 to 18 months).

Sodium Ichthyol.—Firmer consistence more suitable for pills.

Stovaine.—Local anaesthetic, vaso-dilator, 1-3 to 1-2 as toxic as cocaine. Internally, 0.002 Gm. (1-30 grain); hypodermically, 0.75 to 1 per cent. solution; locally, 5 to 10 per cent.

Stypticin.—Cotarnine hydrochloride, haemostatic, analgesic, uterine sedative. 0.05 Gm. (3-4 grain); hypodermically, 2 Cc. 10 per cent. solution.

Styptol.—Cotarnine phthalate, 0.065 Gm. (1 grain).

Styracol.—Guaiacol cinnamate, intestinal antiseptic. 1 Gm. (15 grains).

Sublamine.—Disinfectant similar to mercuric chloride but non-irritating, more penetrating and readily soluble. 1:1000, skin; 1:5000 to 1:10000, bladder; in syphilis, 3 or 4 per cent. intragluteal injection.

Sulphonal.—Name applied to Sulphonmethanum, U. S. P.

Suprarenal Alkaloid.—Vaso-constrictor, stimulates vagal center and has direct stimulant and tonic action on heart muscle.

Tannigen.—Intestinal astringent, non-irritant. 0.2 to 0.7 Gm. (3 to 10 grains).

Tannalbin.—Intestinal astringent. 1 to 4 Gm. (15 to 60 grains); for infants, 0.3 to 0.5 Gm. (5 to 8 grains).

Tannoform.—Astringent, antiseptic. 0.25 to 0.5 Gm. (4 to 8 grains); externally, pure or in 25 to 50 per cent. triturations with talc, 10 per cent. ointment or soap.

Tannopin.—Intestinal astringent and antiseptic. 0.3 to 0.5 Gm. (5 to 8 grains).

Theobromine.—Similar to caffeine, greater diuretic, cardiac and muscular activity, but almost insoluble. 0.35 to 0.5 Gm. (5 to 8 grains).

Theobromine Sodium Salicylate.—More soluble. 1 Gm. (15 grains).

Theocin.—Name applied to synthetic theophyllin.

Theophyllin.—Powerful diuretic, increasing both liquid and solids. 0.2 to 0.35 Gm. (3 to 5 grains).

Thermodin.—Compound of acetphenetidin and ethyl carbamate; analgesic, antipyretic and antiseptic. Antipyretic, 0.3 to 0.6 Gm. (5 to 10 grains); analgesic, 1 to 1.3 Gm. (15 to 20 grains).

Thiocol.—To relieve expectoration, diminish night sweats and improve nutrition. 0.3 to 1.3 Gm. (5 to 20 grains).

Tonols.—Name applied to Schering's glycerophosphates.

[M. G. M.]

[*To be continued.*]

SOMNOS.

The manufacturers of Somnos have been claiming that their preparation is a definite "chemical product formed by the synthesis of chlorethanal with a polyatomic alcohol radical." Very few, if any, physicians who read this description realized that chlorethanal is another name for chloral and that a polyatomic alcohol radical, in this instance, meant glycerin. In *The Journal of the American Medical Association* for Sept. 1, 1906, attention is called to the actual facts in regard to this preparation in a comment on the circular letter published by the H. K. Mulford Company. In the literature regarding the physiologic action of Somnos the H. K. Mulford Company claimed that it has no "depressive action on the heart or circulation and has no destructive influence on the red corpuscles of the blood, nor does it cause gastric disturbances by continued use." The literature also repeatedly said that it contained no chloral and that it was free from the bad effects of chloral.

The Council on Pharmacy and Chemistry, in *The Journal A. M. A.* for Sept. 15, publishes a report of investigations that were made on mice, guinea-pigs and dogs for the purpose of proving or disproving the claims made for Somnos by its manufacturers. The result of the investigation showed that the physiologic action of Somnos is practically indistinguishable from that of a 5 per cent. solution of chloral hydrate.

According to the reports, Somnos is no less toxic than chloral hydrate, and the depressing effects on the temperature, respiration and circulation are the same in each instance. The council suggests that physicians who are in the habit of using Somnos should

compare the results they obtain from it with a 5 per cent. elixir of hydrate of chloral. In this way they can verify for themselves whether or not the council's conclusions are correct, that a 5 per cent. elixir of chloral glycerate (Somnos) has the same physiological and therapeutical action as a 5 per cent. elixir of chloral hydrate.

Medical Miscellany.

Review of Materia Medica and Therapeutics.—The beneficial result of the campaign against nostrums and semi-secret preparations constitutes one of the most noteworthy advances in materia medica and therapeutics during the past year. Already the beneficial results of the efforts of the newly established Council on Pharmacy and Chemistry of the American Medical Association are becoming apparent in the shedding of light upon the true nature and composition of certain of the newer non-official remedies. It is hoped that wide publicity will be given to the reports of the council in the medical press, thus disseminating a knowledge of the true fundamental nature of these remedies and stimulating the members of the profession to a further study of their properties. As a direct result, also, of the widespread discussion of this subject, many physicians have turned from the prescribing of secret or semi-secret ready-made preparations to the writing of their own prescriptions from pharmacopoeial remedies.

Many new remedies have recently been brought before the profession, but only a very few have proved to be of real value. By far the greater share of attention has been given by investigators to drugs of animal origin. Noting this fact, Reilly* makes a plea for a more systematic study of our native plants.

The value of antitetanic serum as a prophylactic agent has been demonstrated to such an extent that many hospitals now employ it as a routine practice in nearly all cases of punctured wounds. Scherck, of St. Louis, Mo., in a convincing article entitled "Antitetanic Serum in Fourth of July Injuries"† records 291 instances of wounds by toy pistols, &c., in which the serum was used as a prophylactic without the development of a single case of tetanus. He compares this result with those obtained in a year when no serum was used and in which nearly one-third of the patients died. The comparison is as follows:

*Jour. Am. Med. Assoc., Sept. 1, '06.
†Jour. Am. Med. Assoc., Aug. 18, '06.

Cases Treated in City Dispensaries.

Year.	Number of Cases.	Antitetanic Serum.	Deaths from Tetanus.
1903	56	No.	16
1904	37	Yes.	None.
1905	84	Yes.	None.
1906	170	Yes.	None.

Like antitetanic serum, antistreptococcus serum appears to have its greatest field of usefulness as a prophylactic in suspicious cases rather than as a curative agent. Employed in this way, it has caused positive results in many instances. Hoffa, of Berlin, speaks encouragingly of the use of Marmorek's antitubercular serum in bone and joint tuberculosis. He reports 30 cases wherein the use *per rectum* of large doses was followed by unmistakably good results.

Concerning the value of tuberculin in the treatment of tuberculosis Pogue,* from a study of 167 cases, draws the following conclusions. Tuberculin is a valuable adjuvant in the treatment of tuberculosis, as is evidenced by the recovery of 28 out of 30 patients who were treated with practically nothing but tuberculin while they continued to follow their ordinary occupations. Cases treated with the addition of tuberculin showed far less tendency to recur than did similar cases treated without tuberculin. Tuberculin, in small doses (.01 to .50 mg.) seems to have a more curative action than when given in large and increasing doses. No ill effects followed the administration of small doses. Tuberculin should never be given to a patient who has fever or who is suffering from mixed infection. Third-stage cases, especially advanced cases, receive little or no benefit from its use.

In this country, Trudeau has contributed an interesting paper upon "The Therapeutic Use of Tuberculin Combined with the Sanatorium Treatment of Tuberculosis,"† in which he sums up his impressions derived from the use of the agent since 1890. He states that tuberculin should not be used as a diagnostic agent until after all other methods have failed, and then only in exceptional cases. Care must be used in its employment therapeutically, as it is a powerful agent. The method of use is important; the danger lies wholly in faulty administration. A febrile reaction is not necessary, and every effort should be made to avoid its production. The treatment should begin with very small doses, and if a reaction occurs no further injection should be given until the symptoms have disappeared. Six months or more are almost always necessary for the production of an effect. No immediate brilliant results follow its use as a therapeutic agent. He has had no experience with febrile cases. Of incip-

*Med. Record, Aug. 4, 1906.
†Nat. Ass. for Study and Prev. of Tuberc. 1906.

ient cases, 56 per cent. of those treated with tuberculin were apparently cured, and 50 per cent. of the untreated. Of advanced cases, 27 per cent. of the treated and 6 per cent. of the untreated were apparent cures. The selection of cases and the longer average stay at the sanatorium of the treated cases may have had something to do with the result. He had long ago formed the opinion that tuberculin may aid in the sanatorium treatment of tuberculosis, and his experience had tended to confirm this view.

The tendency to use larger doses of diphtheria antitoxin than formerly has recently become more and more apparent. It has been claimed, apparently upon substantial grounds, that the serum is efficacious in post-diphtheritic paralysis, even though the patient has previously been treated with the serum. J. S. Billings, Jr., in writing upon "Ten Years' Experience of the N. Y. Board of Health with Diphtheria Antitoxin"* states that the mortality rate from diphtheria in New York City in 1889–91 was 37.3 per cent., whereas in 1902–4 it was only 10.8 per cent. Very much better results are being obtained at present than during the first few years following the introduction of antitoxin. Of 2,447 cases treated between 1895 and 1897, 641 or 26 per cent. were laryngeal; of 4,730 cases treated from 1902 to 1904 only 628, or 13 per cent., were laryngeal. He believes that this decreased frequency of laryngeal involvement is directly due to the present early, larger and more frequent administration of antitoxin.

McGreggor† draws the following conclusions from his studies as to the value of revaccination: In adults not previously revaccinated the greater number are successful on revaccination, though this majority is not large. One previous revaccination, whether successful or not, renders the chances equal of a second revaccination succeeding or otherwise. In case of two previous revaccinations, successful or otherwise, success at a third revaccination is improbable. The period of life at which revaccination is more likely to succeed is before the age of 25 years. Those with good scars are much more likely to take on revaccination than those with poor scars.

But little has recently been added to our knowledge as to the therapeutic value of the suprarenal gland. On the other hand, a number of writers have called attention to the untoward effects which may follow the hypodermic use of its various preparations. Sloughing has occurred in not a few instances, and it has been claimed that long continued use may cause degeneration of the arterial walls. L. Eliot,‡ from an experience with four cases, believes that the use of a solution of adrenalin chloride is indicated in variola hemorrhagica.

The value of antithyreoidin in the treatment of exophthalmic

*N. Y. Med. Jour., Dec. 23, 1905.
†Ind. Med. Gaz., June, 1906.
‡Va. Med. Semi-monthly, Aug. 10, 1906; Washington Med. Annals, 1906, V, p. 26.

goitre and kindred affections is being made a subject of study by Elsner and Wiseman. In a preliminary report* they express the belief that it is useful in relieving the annoying and alarming symptoms of exophthalmic goitre in typical and atypical cases. Its effect is most marked in the relief of the tachycardia, precordial distress and tremor, the improvement being enhanced by rest in bed and careful attention to the diet. Improvement in one or more of the symptoms is likely to occur within from three to seven days after the beginning of treatment. They administered the serum night and morning in doses of from 15 to 30 minims. The initial dose in mild cases was 10 minims.

Somnoform as an anaesthetic is rapidly replacing ethyl chloride, which in turn succeeded nitrous oxide, preparatory to the administration of ether. Hasbrouck,† who has had a wide experience with the anaesthetic, speaks of it in terms of the highest commendation, and reports the only death in this country which has so far resulted from its use.

Interest in the subject of spinal anaesthesia has continued, but with a somewhat abated vigor. Freund‡ reports his experience with 209 cases at Veit's clinic. He believes that the method has been proved to possess so many advantages and so few disadvantages that it has already won an assured position, and itmay take the first place among all methods of anaesthesia. With the present improved technic the few side effects are constantly diminishing in severity and number. He describes the method employed and the results obtained. Of 209 major gynecologic operations spinal anaesthesia was successful in 181, or 86.6. In the remainder a little chloroform was required for the completion of the operation. One fatality occurred in the early history of the clinic before the present technic was adopted. Vomiting was observed in one-fourth of the cases, but it was less severe than after chloroform.

Penkert relates the good results of spinal anaesthesia applied when the patient is under the influence of scopolamin and morphin. 0.01 of morphin and 0.0003 of scopolamin are given hypodermically three hours before the operation, and repeated in an hour. The drowsiness thus induced does away in great measure with the dread and excitement which often interfere with the success of spinal anaesthesia. Of 140 cases in Krönig's clinic there was vomiting in only 4. The patients did not look as if they had undergone a severe operation, but seemed fresh, and were free from any tendency to bronchitis. The combination proved useful in a number of laparotomies, and also for cystoscopy in inflamed conditions, and in obstetrics.

Robert Abbe,§ in an interesting paper, gives the result of his

*N. Y. State Jour. of Med., June, '06.
†Wash. Med. Annals, 1905-6, IV, p 345.
‡Abstr. Jour. Am. Med. Assoc., Sept. 8, 1906.
§Jour. A. M. A., July 21, '06.

experience with radium during the last three years. He was enabled to use a large quantity of the most powerful radium yet made. His conclusions are as follows: 1. Radium action resembles that of Roentgen rays. 2. It differs specifically, and will cure some cases promptly which resist the latter. 3. It is applicable to the interior cavities of the nose and mouth inaccessible to the Roentgen ray. 4. It is curative in most superficial epithelial cancers and lupus. 5. It has failed of curative action as yet in 40 test cases of grave internal cancers. 6. It promises interesting results in other surgical conditions under study.

Tizzoni* has made a careful study of the effects of radium upon animals inoculated with rabies. He reports that he has been successful in saving 50 rabbits by this means after inoculation which otherwise would have proved fatal. Some of the rabbits have been under observation for more than a year. The curative effects were constant and directly proportional to the extent of the exposures, but not to the number of radio-active units in the specimen of radium employed. The smaller specimens were nearly as powerful as those five times larger.

Wilcox,† in discussing the "Medical Treatment of the Gallstone Disease," considers the affection to be primarily a medical rather than a surgical one. It is not primarily due to the presence of a foreign body, but to the liver which is not functionating properly. That the actual removal of the stone does not cure the patient has been demonstrated by surgery. The commencement of treatment consists in removing the cause of the disease, and this is a physician's duty, as it is the congestions and inflammations in the portal system that require treatment together with the bile ducts and gall bladder which are in a catarrhal state that consequently tends to the formation of faulty bile.

He recommends a combination of salicylic acid, acid sodium oleate, phenolphthalein and menthol. He prefers salicylic acid as a cholagogue because of its biliary and intestinal antiseptic effect. The acid sodium oleate is excreted by the epithelium of the bile ducts and assists in disinfection. The phenolphthalein is a safe and prompt laxative, as well as a very efficient antiseptic to the alimentary tract.

A paper dealing with recent progress in therapeutics would be incomplete without reference to the views expressed by Dr. R. C. Cabot, of Boston, at a recent meeting of the Norfolk Medical Society.‡ Speaking upon the subject, "The Renaissance of Therapeutics," he expresses the belief that a new movement has recently taken place in therapeutics which has given it an awakening to a new life, a new start in life. He describes a "group of phenomena which, taken together, constitute impressive evi-

*Abstr. Jour. A. M. A., Aug 18 and Sept. 8, '06.
†Trans. Am. Therapeutic Soc., 1906.
‡Jour. A. M. A., June 2, '06.

dence that we have received a new impetus on the old road." He sums up his conclusions as follows:

1. Therapeutics has become within the past few years very noticeably more effective. 2. This increased effectiveness is the result of (*a*) the aggressive spirit, as exemplified by the work of the N. Y. Board of Health in school hygiene and school inspection, and by the tuberculosis work now being carried on in Boston: (*b*) the greater part now being taken by the laity in medicinal work, both by intelligent co-operation and financial support: (*c*) our greater acquaintance with physical therapeutics, especially with the details on which their successful application depends: (*d*) the rise of scientific mind cure and of social work, marking a recognition of the psychical and of the social elements in all disease: (*e*) a wider utilization of the unique talents of women in the field of therapeutics. 3. With the rise of the type of therapeutics here described we are now witnessing a limitation of the sphere both of surgical therapeutics and of drug therapeutics. The latter limitation will do much to undermine the superstitions on which the patent-medicine habit rests.

FRANCIS P. MORGAN.

The Scope of the X-ray in Medicine.—In the eleven years since Roentgen demonstrated the x-rays to the Physico-Medical Society of Würzburg marvelous advances have been made in the application of radiant energy in many branches of medicine. Some of these advances are widely known and appreciated by medical men all over the world, but others are just beginning to gain attention. The surgeons especially have adopted this new line of work for diagnosis and the dermatologists for treatment. To the other medical men the advantages have not been presented as practical enough to lead to their adoption.

The examination with the fluoroscope showing displacement in fractures of the long bones, and the presence in the extremities of foreign bodies of greater density than the tissues, is quickly made and very satisfactory. On the other hand, the fluoroscopic examination of the thorax for intrathoracic disease needs a little more study for its interpretation, but then is able to throw great light on a number of conditions that are still doubtful under other methods of diagnosis. The diagnosis and the extent of the exudate in pleurisy with effusion is easily corroborated, inflammatory deposits in the lung, whether acute or chronic, whether near the surface of the lung or central, are readily detected. The limitation of the action of the ribs and the diaphragm on one side of the chest suggests an early tubercular process if they persist and increase, before other signs are even suspicious. In the diseases of the heart the increase in

size and the irregular expansion of the several chambers will confirm or perhaps make a diagnosis. The pulsating wall of an aneurism, with its fluid contents, can usually be outlined, and if the aneurismal sac is entirely within the thorax, the diagnosis may be impossible by other means. Mediastinal tumors may be outlined.

The fluoroscopic examination, however, has marked limitations. But in these cases as, for instance, in linear fractures of the bones, especially around the joints, and again where there is a question as to the texture of the bone, or a slight difference in the density of the tissues, or small foreign bodies in the thicker structures of the body, as in renal and ureteral calculi, the photographic plate gives us a permanent record, a chance for prolonged study and for comparison with future developments, and hence an early diagnosis that can frequently not be arrived at in any other way. One of the most important advances due to the x-ray study of cases is shown in the number of cases that formerly were all grouped as sprains and now are shown to be fractures, usually without displacement, in the regions of the ankle, wrist and knee.

For treatment the x-rays have proved of marked benefit in cancer, especially in epithelioma, as is widely known. But the degree of benefit is perhaps not so well appreciated. Pusey claims in epithelioma 88 per cent. of cures, and these figures are equalled and exceeded by others. Robert Abbe, with the use of powerful radium in addition to the x-rays, claims practical cures for all cases of epithelioma where the life of the patient is not already imminently threatened. In other forms of cancer, while the results are not nearly as good as in epithelioma, the x-ray treatment has no rival outside of the knife. If the cancer is operable there is no question but that excision is the best treatment, but if the condition is inoperable for any reason the x-rays should be given a chance, not that they will cure any large percentage of the cases, but because they will cure some and will relieve more, lengthening life and making the last days of the patient much more comfortable than any other form of treatment that has yet been established. And the consensus of opinion is leading to the use of the x-rays both before and after nearly every cancer operation; to shut off lymphatics before operation and to resolve outlying cancer areas after operation. In cancer of the esophagus or rectum, where the stenosis leads to the worst symptoms, applications of radium will usually clear up the stenosis and at least temporarily improve the general health of the patient.

In the treatment of diseases of the skin and its appendages much has been done with the x-rays, especially in the chronic and more rebellious diseases, such as chronic eczema, psoriasis, acne, sycosis and favus. In the nevi the results have been far superior

cosmetically to any other form of treatment, and usually it is the cosmetic effect that is most desired.

In certain constitutional diseases, as leprosy, the results are very encouraging ; in mycosis fungoides several complete cures have been reported, and both of these two diseases previously were hopeless. In exophthalmic goiter a number of cures and more improvements have been reported. In diseases of the lymphatic system, whether of the lukemia group or of some adenopathy, there is almost always a temporary improvement and some cures have been reported. All the lymphoid tissues of the body seem especially sensitive to the x-rays and to melt away under their influence.

The analgesic effect of the x-rays and radium is one of its most marked and least appreciated qualities. Pains of nearly all types are relieved. The acute pains of neuritis and neuralgia, the lancinating pains of locomotor ataxia, the persistent pains of rheumatism, the ceaseless, dull, boring pain of cancer—all have been found to disappear, sometimes permanently, under radiotherapy.

The objections to x-ray treatment on the ground of the dangers of burns, unknown constitutional effects, and, more recently, of possible sterility, while all are well founded are of but slight significance compared to the good to be gained, and certainly ought not to be common occurrences under the watchful care of a medical man who understands the powers of his machine, and need not occur any more than the objectionable results from the drugs that all are daily prescribing.—TRUMAN ABBE.

Bureau of Fisheries—MALFORMATION IN A FUR-SEAL PUP.—On July 20, 1906, on one of the Pribilof Islands (St. George) a seal pup was found which had died of a strange anomaly of the intestinal tract. It lay on the rocks near its harem on North Rookery. A few inches of umbilical cord remained attached. Upon examination to learn the cause of death, a duplication of the large intestine was found. The stomach to pylorus was normal, but here began a large intestine resembling a normal large intestine, but longer and much more widely distended. It ended blindly in two constrictions. A small intestine then began, its blind end hung in the mesentery close to the end of the anomalous large intestine, but in no way connected with it. This small intestine was normal in appearance and length and connected properly at a normal caecum with an undersized large intestine which was filled with masses of waxy material. There was no continuity of the intestinal tract, and all the milk ingested had remained in the first mentioned large intestine, which was distended with gas and foul material. The small intestine contained nothing but mucous secretion, and no food had passed

through it. The large intestine from anus to caecum had probably never voided, and the waxy contents must have been in place at birth. There was considerable blood free in the abdominal cavity, none in the thorax. The lungs had only partly filled with air, and breathing must have been imperfect during the short time the pup lived. It was of good size, had plenty of subcutaneous fat and was not abnormal in other respects than those described.—M. C. MARSH.

The following physicians, **Applicants for licenses to practice medicine and surgery** in the District of Columbia, passed the October examinations:

Julian C. Blackistone, John S. Clifford, Virginius Dabney, Kosciusko Hamilton, Frank C. Hayes, Roy C. Heflebower, Hans C. Jorgenson, William P. Kirby, Anthony J. Lanza, Elwin C. Schneider, Charles W. Sult, Dallas G. Sutton, Frank H. Towner, Merton E. Twogood.

Statement of averages by colleges.

Passed.—University of Virginia, 78.932; Hahneman Medical College, 85.91 and 75.25; George Washington University, 83.272, 77.927, 75.540, 82.010, 79.642, 77.750, 80.815; Georgetown University, 77.617, 76.122, 80.447, 86.290. *Failed*—George Washington University, 66.795, 68.072, 68.462, 45.467, 72.825, 73.910; Maryland Medical College, 60.512; Howard University, 71.350, 61.467, 59.250; Georgetown University, 67.482, 67.252; Southern Homeopathic Medical College, 68.21.

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